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1983 B/CA Salary Survey

Our 10th annual compensation review reveals that, overall, salaries increased slightly this year. Perhaps that's to be expected as many companies are only now beginning to recover from the worst recession since World War II.

by David W. Almy

Seven flight departments among those that B/CA contacts on an annual basis did not survive the year that has passed since we last surveyed the financial health of U.S. corporate aviation personnel. The victims ranged from small, single-pilot operations for comparatively small family-owned businesses to large flight departments of multibillion-dollar multinational corporations. Financial hardship apparently knows no fiscal boundaries.

In particular, the oil exploration business and other petroleum-related industries have been hard hit. Traditional "smokestack" industrials and capital equipment manufacturers are also lagging in the recovery. One company with interests in both areas had halved the salaries of its flight department personnel during the last 12 months. Our survey also discovered several flight departments where severe flight curtailments were in effect and many chief pilots felt lucky to still have a job.

That's the bad news.

The good news is that most of the companies in the United States seem to be recovering from the recession and their flight departments do not seem to be far behind. What's more, the collective feeling among the flight department managers and chief pilots contacted was one of expectancy and sober optimism. Their companies generally reported improved earnings in the first two quarters of the year, and they expected the improved financial conditions eventually to trickle down to them in the form of salary increases and approvals to replace older equipment.

Within the companies that were holding their own or had never been severely hurt by the recession, salary increases were modest, most often reported in the 3- to 7-percent range. These increases seem to reflect a cautions attitude among company management and the comparatively small increase in inflation during the past year. From June 1982 to June 1983 (the latest statistics that were available at press time), inflation as measured by the consumer price index rose just 2.6 percent—the lowest 12-month increase since October 1967. Corporate aviation's collective average salary rose just 0.8 percent during the same time, reflecting the lingering salary freezes and cutbacks fostered by the recession. However, that 0.8-percent increase is 0.8-percent more than 1982, when we reported a statistically insignificant *overall* increase in corporate aviation salaries.

Nearly all of the Government's economic indicators have been positive since the first of the year, however, and the economy does indeed seem to be on the mend. The annual rate of growth of the United States' gross national product was 9.2 percent in the second quarter of 1983—a five-year high—and after tax corporate profits (a traditional measure of aircraft sales prospects) were reported to be up 14.7 percent in the same time frame.

At what point and to what degree those improved figures will begin to affect the amount of flying done by the nation's businesses is of some debate. Business aviation is more often than not perceived as an "easy" budget cut. Consequently, flight department funds usually are the first cut and the last restored. At a small number of companies however, just the reverse is true. In those cases, management has decided that the best way to surmount hard times is to beat the bushes on the premise that when the recovery does come, the firm will be in the best possible position to capitalize on the economic up-

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Figure 1

Comparative Salaries 1982/1983

	1982	1983	% Annual Increase (Decrease)
Heavy Jet (over 30,000 lb)			
Chief Pilot	$61,500	$62,900	2.3
Captain	48,959	45,100	(7.9)
Copilot	31,340	33,400	6.6
Chief of Maintenance	34,615	38,425	11.0
Mechanic	25,710	27,000	5.0
Medium Jet (up to 30,000 lb)			
Chief Pilot	$46,875	$49,160	4.9
Captain	36,400	38,060	4.6
Copilot	27,082	27,929	3.1
Chief of Maintenance	33,955	36,735	8.2
Mechanic	23,694	25,646	8.2
Light Jet (below 12,500 lb)			
Chief Pilot	$38,610	$35,000	(9.3)
Captain	32,600	30,500	(6.4)
Copilot	22,000	22,500	2.3
Chief of Maintenance	31,000	31,000	0.0
Mechanic	21,000	21,500	2.4
Heavy Turboprop			
Chief Pilot	$45,000	$46,000	2.2
Captain	34,010	35,010	2.9
Copilot	28,000	26,000	(7.1)
Mechanic	20,072	21,500	7.1
Light Turboprop			
Chief Pilot	$38,523	$35,867	(6.9)
Captain	30,518	29,417	(3.6)
Copilot	22,775	23,267	2.2
Mechanic	22,000	20,400	(7.3)
Cabin Class Piston Twin			
Pilot	$30,000	$25,500	(15.0)
Other Piston Twin			
Pilot	$26,000	$24,600	(5.4)
Turbine Helicopter			
Pilot	$31,350	$32,658	4.2
Mechanic	29,700	$29,000	(2.4)

Shown here are the median salaries derived from the 1982 and 1983 B/CA Salary Surveys. Overall increase this year was 0.8 percent within the B/CA control group of about 120 flight departments.

turn. One company surveyed was flying a Gulfstream G-III 1,600 hours annually in just such an effort, even though that company was hit hard during the recession and still has not fully regained its former strength.

Indeed, as this was written, Wall Street analysts were expecting the recovery to shift toward energy concerns with less emphasis on the high-tech companies that led the turnaround. When and if this happens, flight department managers at those energy companies may be able to breathe a little easier.

The Survey

The data in our 10th annual salary are based on sample salaries of 671 pilots and mechanics employed with 115 flight departments across the United States. Among this group, benefits were reported as an additional 26.9 percent of the reported salaries. This number, which is consistent with past surveys, indicates that regardless of salary, benefits allotments seem to hover in the mid-20-percent range.

Virtually all of the flight departments surveyed were covered by major-medical and long-term disability benefits, while nearly 80 percent of those questioned were covered by a dental plan.

Company cars were usually provided only to a few chief pilots, and mainly to those whose companies are associated with the automobile industry. Pilots who had cars considered them worth an additional $3,000 to $6,000 per year—a nice bonus.

Loss-of-license insurance is still somewhat rare, with about one third of those surveyed reportedly covered. Many of those companies that do not have loss-of-license coverage said that their firms had

Ten years of producing salary surveys has taught us that once this information gets into the hands of business pilots, it follows a fairly predictable path. When the B/CA issue that contains the salary survey arrives on their doorsteps, pilots scrutinize the numbers to confirm (at least in their own minds) that they are indeed underpaid. The article is then copied and sent to all the appropriate higher-ups who are in a position to rectify such injustices. If only it were really that simple.

Experience has also taught us that pilot and mechanic salaries are highly dependent on several factors not listed in these charts. The process used to determine aviation personnel compensation packages is part formula, part politics and part mysticism. We have been able, however, to nail down some of the more easily measurable criteria, and we have listed them here so that you can perform your own (re)evaluation.

- **Performance**—On-the-job performance, as it is perceived by executives and supervisory personnel, is one of the most subjective of salary evaluation criteria. The amount and quality of work performed by pilots can be measured many ways. In the case of amount, pilots typically fly between 200 and 600 hours per year, depending on the equipment being flown and company duty-hour limitations. Single-pilot operations, because of the higher workload one individual must carry, can be expected to log fewer flight hours. Larger aircraft which are usually equipped with additional flight crewmembers that would lessen the individual burden, tend to be flown more.

The quality of the work (in this case flying) performed annually by the pilot might be gauged by the number of squalls that the chairman has to endure during the year

retraining programs in case pilots were not able to fly for some reason. Under such a program, airmen might be transferred to another division in order to stay with the company and retain their seniority and benefits.

One benefit of particular significance was the salary bonus that was usually provided only for chief pilots but was reported to be department wide at some

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companies. Usually based on overall company performance, this additional compensation ranged from $1,000 to $17,000, depending on the company. In addition, several managers reported that their companies were more likely to give their pilots bonuses rather than standard raises because such a system would give the company more financial flexibility.

Additional benefits included stock-option plans, conventional long-term profit-sharing plans and savings plans.

Our 10th salary survey prompted us to check our first efforts, so we dug out the September 1973 issue of B/CA and discovered that the average chief pilot of a heavy jet was making $32,000 a decade ago. Taking our current numbers into account and assuming the same annual percentage increases for the next 10 years as we have had for the last decade (a questionable supposition at best), the median salary for a chief pilot of a Gulfstream G-IV (or maybe a G-V?) should be in the area of $140,000 annually by 1993. No comment.

Although situations vary by company, there seems to be little difference between the median salaries of personnel in fleet operations and those in single-air-

Aviation Salaries: A Guide for Executives

or whether or not there is ice available for his martinis.

• **Tenure**—The most significant factor affecting aviation salaries, right or wrong, is the length of time an individual has been with the company.

• **Qualifications**—Academic credentials tend to tell more about the overall abilities of an individual rather than revealing their competency as pilots or mechanics (unless some form of aeronautical degree has been awarded). Experience is what tends to make employes more valuable to a company and makes prospective employes more attractive to potential employers. Recent and similar experience is consistently ranked at the top of the job requirement checklist, and for good reason.

For pilots, aviator skills are gauged in part by the level of ratings held (that is, commercial, multi-engine, ATP, rotorcraft, etc.), the amount of time spent flying (overall) and the number of type ratings currently held. For mechanics, an A&P license is desirable as is a work history (for both pilots and mechanics) that includes time with aircraft similar to the ones that your company flies.

Finally, many executives place a premium on the ability of pilots to handle themselves "correctly" in sometimes difficult situations. In the atmosphere where chairmen and presidents travel, they usually prefer to avoid the bother of inconsistent service and interrupted business days. Those are some of the reasons that they got off the airlines and into their own aircraft in the first place.

• **Company Policy or Tradition**—Many corporations have traditionally paid a particular salary to their aviation personnel, regardless of the industry's norms. In some cases, these numbers are far above average; in other cases, they are far below. Nevertheless, traditional compensation standards at individual companies are tough to change and so must be accommodated.

• **Financial Health of the Company**—If the company is doing well, it only stands to reason that the company's flight department should be compensated for its contribution to the profits.

• **Size of the Company**—Economies of scale come into play here, both in the number of aircraft within the flight department and the size of the parent company. Larger companies generally pay more and offer more comprehensive benefit packages than smaller ones.

• **Geographical Area**—Compensation is based partially on the economic costs of employing individuals in one area vis-a-vis another. For instance, it costs more to employ a person in Boston than it does in Pittsburgh. As such, Boston employes, although paid more than their Pittsburgh peers, often are actually making the same amount (or less) because the cost of living is higher in Beantown.

Sources for comparative cost-of-living numbers are currently available only from the private sector because of changes in the way that the Federal Government keeps such statistics. Two sources that would be happy to supply you with comparative cost-of-living statistics for a price are Runzheimer & Company of Rochester, Wisconsin and the American Chamber of Commerce Researchers Association in Indianapolis.

In addition, industry salaries, as reported in surveys, are available from six sources. We suggest, as we do with all such surveys, that they be used as guides and should not be used in place of management's judgment and insight into particular company situations.

(1) **B/CA**—Our magazine has been surveying the business aviation community for 10 years and reporting on the salaries received through phone conversations with chief pilots, aviation department managers and compensation departments. The results of the 1983 survey appear on the adjoining pages.

(2) **General Mills**—General Mills polls flight departments annually (136 in the last survey) and data (by rank and type of aircraft flown) are published on a regional and national basis. Some information on benefits is also included. Survey results cost $195 for nonparticipants and $85 for participants. Contact Nancy Austin, Compensation Analyst, General Mills Corp., P.O. Box 1113, Minneapolis, Wi. 55440.

(3) **NBAA**—The trade organization periodically polls its member companies, but the results are available only to those member companies. If your company is a member (or would like to be a member), contact the NBAA, One Farragut Square S., Washington, D.C. 20006.

(4) **Professional Pilot**—This magazine polls its readers by postcard and prints the results annually in its April issue. Contact *Professional Pilot*, West Building, Washington National Airport, Washington, D.C. 20001.

(5) **Rotor & Wing International**—This monthly publication's first salary survey of helicopter pilots and mechanics appeared in the August 1983 issue. For more information, contact *Rotor & Wing International*, News Plaza, Box 1790, Peoria, Il. 61656.

(6) **Travellers Insurance**—The Travellers polls about 50 *Fortune* 500 corporations and distributes the collated data to the participants. To become a participant (provided your company's annual income is measured in 10 figures), contact Richard Velloney, Director of Staff Compensation, Travellers Insurance, One Tower Square, Hartford, Ct. 06115.

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craft operations. Obviously, however, if a pilot is current in half a dozen aircraft, he deserves greater compensation than his less-versatile peers.

As always, the B/CA Salary Survey is meant to be a management aid. When budgeting flight department salaries, keep in mind that the salaries reported in our charts are just that—reported. B/CA's accuracy is considered to be ±5 percent of the median salaries listed.

As in past years, this survey was conducted by telephone. B/CA has a control group of over 100 flight departments that we try to contact each year. We have made no effort to qualify any of those flight departments contacted as being representative of industry pay scales or fringe benefits. Originally, these flight departments were selected randomly by geographical area and type of equipment operated. To ensure confidentiality, the names of responding companies are separated from the responses. We believe that a telephone survey of aviation managers, chief pilots and compensation departments affords greater accuracy and eliminates many ambiguities.

Figure 2

National Summary of Salaries

Turbojet Turbofan		G-II/III	JetStar	Falcon	Sabre	HS 125	Westwind	Learjet	Citation
Chief Pilot	High	$80,000	$63,000	$62,500	$70,000	$68,000	$52,000	$65,000	$53,600
	Median	67,000	58,800	48,000	57,300	46,500	48,000	46,000	35,000
	Low	49,000	35,000	41,600	40,000	30,000	42,200	35,500	30,000
Captain	High	$67,300	$52,500	$58,000	$54,600	$47,400	$45,500	$50,000	$37,200
	Median	49,100	41,100	41,500	35,700	39,600	37,000	36,500	30,500
	Low	37,140	25,000	33,000	26,400	31,000	31,000	27,500	22,000
Copilot	High	$45,960	$34,000	$40,547	$37,800	$35,000	$33,000	$42,000	$34,000
	Median	36,300	30,500	29,704	29,100	25,340	27,500	28,000	22,500
	Low	28,700	25,200	27,000	24,000	18,000	26,500	17,000	19,000
Chief of Maintenance	High	$53,500	$44,000	$41,000	$47,700	$47,100	$41,800	$40,000	$33,750
	Median	43,000	33,850	35,693	38,800	39,250	36,750	33,184	31,000
	Low	29,340	31,500	27,667	32,108	30,000	26,000	22,000	24,000
Mechanic	High	$38,000	$29,870	$35,500	$35,200	$29,100	$29,800	$33,000	$29,200
	Median	29,000	25,000	28,900	26,200	24,100	25,028	24,000	21,500
	Low	20,000	21,000	19,000	17,400	16,500	19,000	20,000	18,000

Turboprop		G-I	King Air	MU-2	Cheyenne
Chief Pilot	High	$53,250	$46,950	$43,000	$41,250
	Median	46,000	40,000	34,000	33,600
	Low	43,500	28,750	26,000	27,000
Captain	High	$41,040	$38,000	$35,100	$37,000
	Median	35,010	29,250	29,000	30,000
	Low	34,000	25,000	22,500	19,000
Copilot	High	$32,871	$35,000	$27,000	$30,000
	Median	26,000	24,900	22,000	22,900
	Low	24,250	20,000	17,000	18,000
Mechanic	High	$27,800	$27,066		
	Median	21,500	20,400	*	*
	Low	18,200	18,486		

Other Fixed Wing		Cabin Class Piston Twin	Other Piston Twin
Pilot	High	$25,700	$34,199
	Median	25,530	24,800
	Low	18,000	17,000

Turbine Helicopter		S-76	222	109A	Gazelle	206	500D
Pilot	High	$46,400	$42,500	$38,000	$36,500	$63,000	$30,500
	Median	37,900	33,150	32,000	29,000	35,000	28,900
	Low	25,000	26,000	30,000	25,500	28,000	24,000
Mechanic (All Models)	High	$41,100					
	Median	29,000					
	Low	20,400					

*Mitsubishi MU-2 and Piper Cheyenne maintenance was reported primarily on a contract basis.

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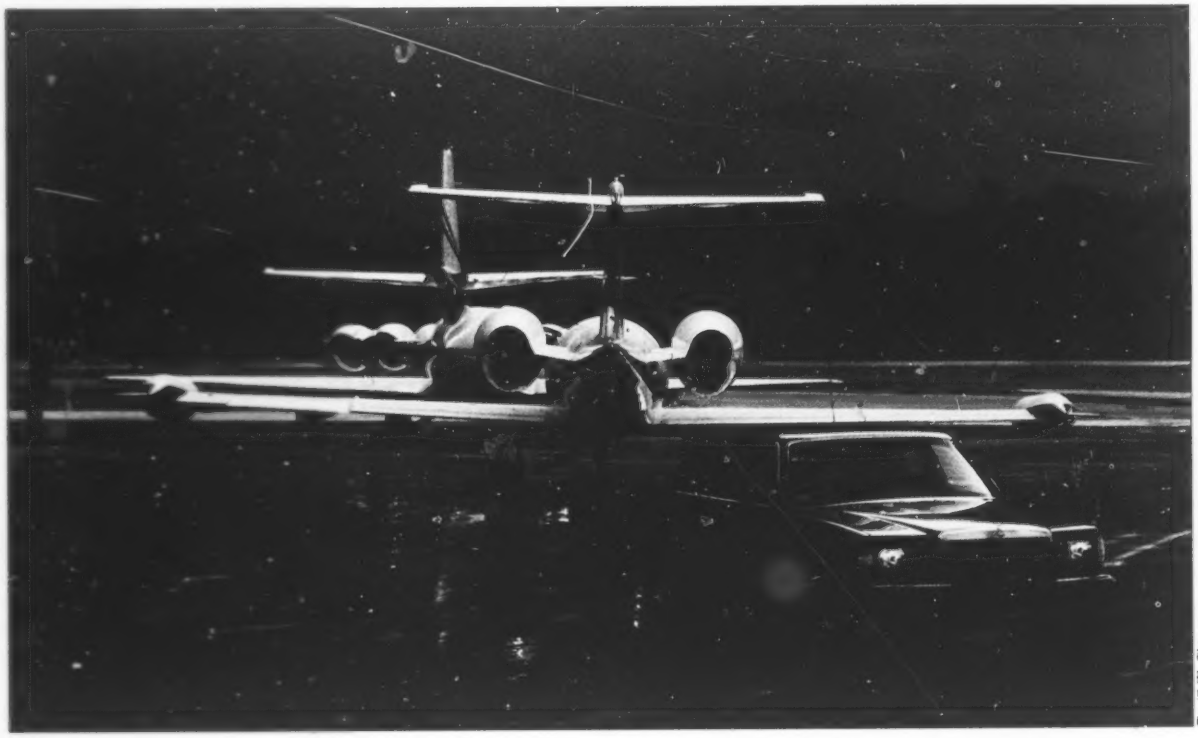
Business and commercial Aviation

December 1983

Business Aviation and the Fortune 500

Business Aviation and the *Fortune* 500



David W. Almy

Despite a dismal economic year, the aircraft operators have once again outpaced their nonoperating counterparts in terms of financial performance and in their ability to weather fiscal uncertainty.

by David W. Almy

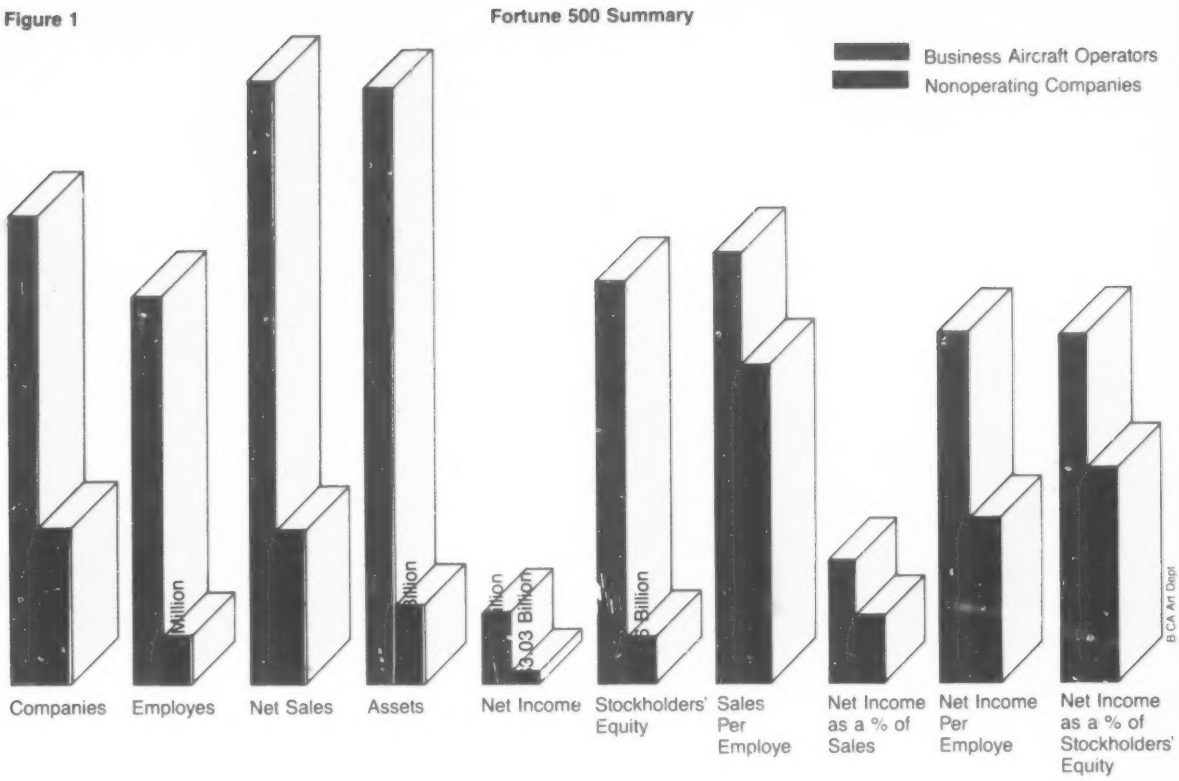
"Recession buffeted the *Fortune* 500 in 1982, punishing both sales and profits. Overall, the 500's profits fell 27.1 percent from the 1981 level (or 33.2 percent in real terms, after adjustment for inflation of 6.1 percent as measured by the Consumer Price Index). That was the largest earnings dip in the 29-year history of the 500. The 5.7-percent decline in total sales was the second drop ever and the first since 1958. In real terms, adjusted for the increase in the CPI, the 500's 1982 sales fell 11.8 percent for 1981."

Those sobering thoughts began *Fortune* magazine's annual review of the 1982 financial performance of the 500 largest U.S. industrial corporations. It was, in an admitted understatement, a difficult year.

Among those disappointing statistics, however, a decidedly brighter picture emerges for those among the 500 that operated business aircraft in 1982. Once again, the aircraft operators outpaced—in raw numbers, in efficiency and in their ability to weather economic adversity—the nonoperators. The statistical data used in this report were compiled recently for B/CA by Aviation Data Service of Wichita.

Since we last conducted this survey, however, some changes have been made in the way that *Fortune* charts corporate America. Ten companies among last year's 500 left the list to be included on a brand-new roster: the *Fortune* Service 500. That list comprises those top-performing firms that *do not* derive over 50 percent of their sales from manufacturing or mining—a prerequisite for being included in the *Fortune* 500. (The Service

Figure 1



500 includes the top 100 financial, diversified service and commercial banking companies in addition to the top 50 life insurance, retailing, utility and transportation firms.) This requirement was one of the reasons that CBS and Twentieth Century-Fox left the *Fortune* 500 in 1981. Due to acquisitions and changes in the make-up of its business, RCA left the *Fortune* 500 in 1982.

The creation of the *Fortune* Service 500 marks a change in the way that magazine analyzes the financial performance of U.S. corporations.

While the Service 500 is an addition to the rankings, *Fortune* has decided to drop the second 500, leaving the 501st to 1,000th largest U.S. corporations without a statistical home. Because *Fortune* has dropped these smaller corporations, we bring you the 1982 analysis among only the *500* largest corporations in the United States. Although we were not able to obtain sufficient data on the Service 500 to meet our deadline for this year's report, we hope to compile information on both the Service and Industrial 500s for the December 1984 issue of B/CA.

Because of the transition from the old *Fortune* 1,000 listings to the current *Fortune* 500, comparisons with past statistics have less meaning. However, we have endeavored to make comparisons where we felt they were applicable.

The Chicken and the Egg

"Did the aircraft facilitate the profits, or did the profits facilitate the aircraft?" While the correlation between business aircraft use and corporate financial performance is not entirely clear, there remains strong statistical and intuitive evidence in the operators' favor. If sound management is accepted as a prerequisite for strong financial performance, and the use of business aircraft represents sound management, then it follows that those companies operating aircraft should perform better than those that do not. It is less likely, however, that the use of business aircraft is the sole reason for a company's success. Perhaps the use of business aircraft indicates that an aggressive management has found that those machines are useful management tools that facilitate productivity.

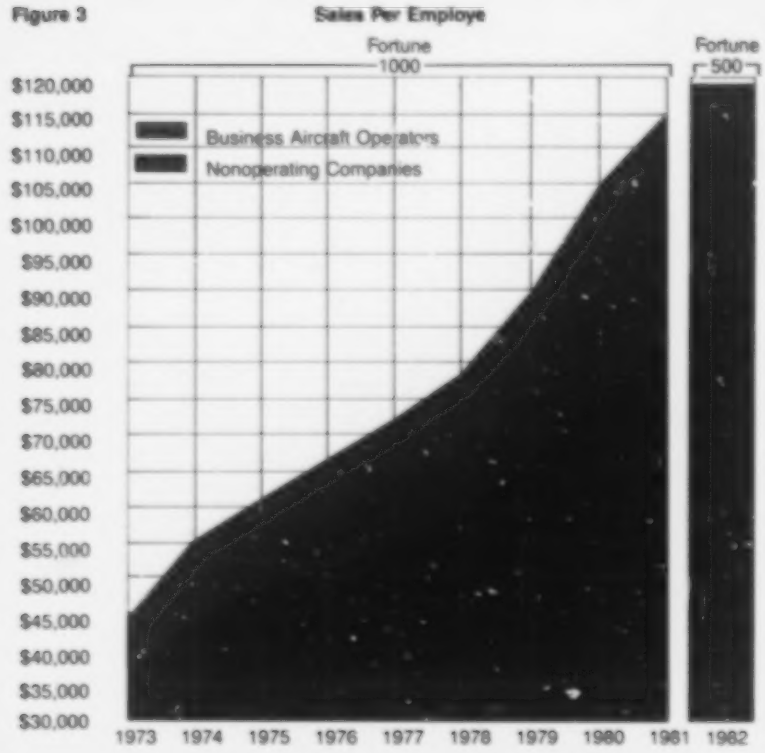
Nearly three fourths of the *Fortune* 500 operate their own aircraft. Three hundred seventy three (74.6 percent) are plying the skies, while 127 (25.4 percent) are not. Among the top 100 companies, only seven were without their own business aircraft. Heading that nonoperating list was Chrysler at No. 29 (which, ironically, took delivery of a Canadair Chal-

Figure 2

Comparative Fleet Size

Number of Aircraft	Number of Companies
1	86
2	67
3	54
4	35
5	23
6	17
7	16
8	12
9	5
10	7
11	6
12	9
13	4
14	8
15	4
16	2
17	2
18	2
19	1
21	2
22	2
25	1
26	1
28	1
31	1
32	1
37	1
40	1
45	1
46	1
1,977	373

Figure 3



for the nonoperators. Companies operating aircraft sold 29 percent more than their competition on a per-employe basis—an advantage that meant an average additional income of $26,720 for each employe.

Even more striking is the disparity between operators' and nonoperators' net income—the measure of company profitability and efficiency. Net income per employe totaled $4,582 for the operators in 1982, while the nonoperators reported only $1,877. This difference represented not only an additional $2,705 in income for the operators but a net-income advantage for the aircraft operators of *2.4 times* that of the nonoperators.

One conclusion that can be drawn from comparing the financial statistics plotted on the accompanying graphs is that in times of relative economic prosperity, the difference in financial performance between the operating and nonoperating industrials is not as great as it is during times of economic hardship. In other words, it appears as if corporations that are business aircraft operators weather stormy economic times more successfully than those companies that do not operate aircraft.

The size of the collective aircraft fleet of *Fortune* 500 totaled 1,977 in 1982. This included 165 single engine piston airplanes (8.4 percent of the total), 171 mul-

lenger in 1983 after eking out a profit in 1982), International Harvester at No. 73 (it lost $1.6 billion in 1982), American Home Products at No. 76, Control Data at No. 80, CPC International at No. 87, American Brands at No. 90 and Agway at No. 97.

Companies operating aircraft in 1982 continued to perform better than nonoperators by every financial measure. An analysis shows that in 1982 the 373 companies that operated aircraft generated 91 percent of the total net sales, had 89 percent of the 14.4 million persons employed by the top 500 corporations, held 92 percent of the $1.3 trillion in assets, garnered 95 percent of the $61 billion in net income and held 93 percent of the $600 billion in stockholders' equity. Six of the 10 biggest increases in 1982 sales occurred in aircraft-operating companies, and seven of the 10 biggest increases in profits were recorded by companies that fly business aircraft.

In terms of efficiency or productivity per employe, the gap between aircraft operators and nonoperators is substantial. These statistics are considered particularly important as they take into account, to a degree, the relative size of competing companies. The average sales per employe for the operators in 1982 were $119,461, compared with only $92,741

Figure 4

Groups	Companies		Aircraft Operated
	Nonoperators	Operators	
Mining, Crude Oil Production	0	11	56
Food	17	40	117
Tobacco	1	2	18
Textiles, Vinyl Flooring	3	8	16
Apparel	2	10	36
Furniture	1	0	0
Paper, Fiber & Wood Products	6	26	117
Publishing, Printing	5	10	45
Chemicals	13	29	151
Petroleum Refining	7	32	365
Rubber, Plastic Products	2	7	27
Leather	0	1	2
Glass, Concrete, Abrasives, Gypsum	1	14	39
Metal Manufacturing	7	22	81
Metal Products	6	20	62
Electronic Appliances	12	27	152
Shipbldg, RR & Transport Equip.	4	2	5
Measuring, Scientific, Photo Equip.	8	10	48
Motor Vehicles	5	10	73
Aerospace	1	15	225
Pharmaceuticals	5	13	44
Soaps, Cosmetics	3	6	19
Office Equipment (Computers)	7	9	49
Industrial & Farm Equipment	5	38	190
Musical Instr., Toys, Sport Goods	2	2	5
Beverages	4	9	35
Average or Total	**127**	**373**	**1,977**

tiengine piston airplanes (8.6 percent), 412 turboprop airplanes (20.8 percent), 984 turbofan and turbojet airplanes (49.8 percent) and 245 helicopters (12.4 percent). Fifty-one percent of the aircraft flown by the *Fortune* 500 are operated by the top 100 companies.

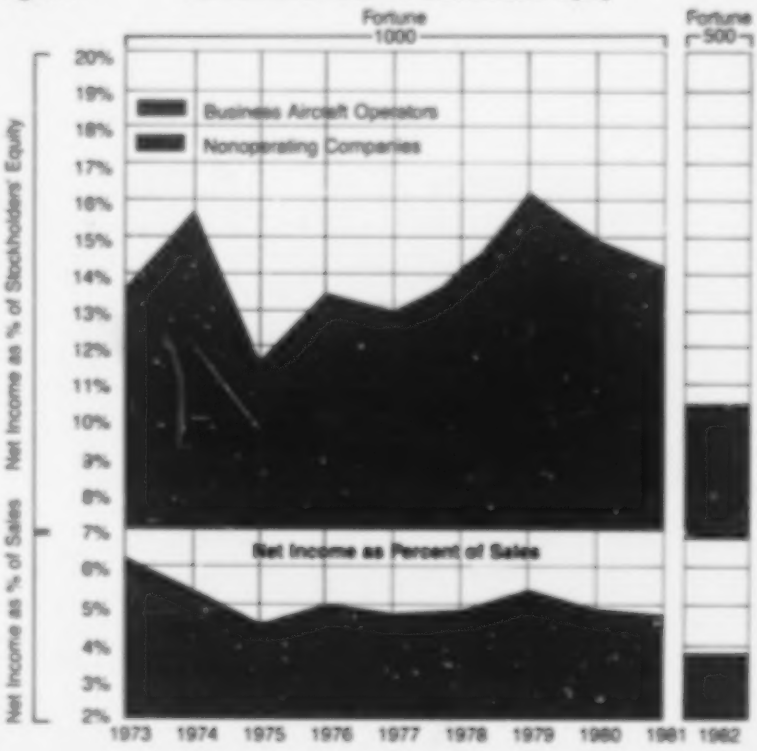
The average number of aircraft in a *Fortune* 500 corporation's company fleet totaled just over five in 1982. Nearly one quarter (86) of the *Fortune* 500 companies operate only one aircraft. A baker's dozen of the *Fortune* 500 firms operate 21 or more aircraft, with the largest company fleet totaling 46 aircraft.

The average fleet size of the five largest operators was up to 39.8 aircraft in 1982, versus 38 in 1981 and 34 in 1980. The five largest operators and their 1981 and 1982 fleet sizes were: Standard Oil of California, 45/46; Rockwell International, 42/45; United Technologies (a new member of the top five in 1982 mainly because 24 of its 40 aircraft are twin turbine helicopters—presumably S-76s, which are manufactured by the corporation's Sikorsky division); Tenneco, 37/37; and Mobil, 34/32.

Aircraft Age and Value

Older aircraft constitute a considerable part of the *Fortune* fleet. The average year of manufacture for the entire fleet was 1973. The average year of manufac-

Figure 5 **Net Income as Percent of Stockholders' Equity**



Sales Per Employe		Net Income as a Percent of Sales		Net Income Per Employee		Net Income as a Percent of Stockholders Equity	
Nonoperators	Operators	Nonoperators	Operators	Nonoperators	Operators	Nonoperators	operators
0	275,731	0.0	1.3	0	3,495	0.0	3.3
134,498	106,299	3.4	3.2	4,514	3,374	16.3	13.5
84,222	116,412	9.5	8.3	7,976	9,611	19.2	19.6
55,933	53,458	7.3	2.1	4,057	1,116	18.7	5.6
55,945	46,678	4.5	3.8	2,495	1,752	12.6	11.4
51,265	0	1.4-	0.0	697-	0	4.0-	0.0
90,932	99,981	3.7	2.4	3,391	2,405	8.8	4.8
69,742	88,350	5.4	7.5	3,773	6,603	11.7	16.3
133,112	129,110	2.3	3.9	3,059	5,010	6.3	8.9
255,316	415,459	1.5	4.2	3,820	17,579	9.7	12.5
97,932	69,322	1.7	1.4	1,642	989	6.4	4.5
0	41,550	0.0	0.2	0	69	0.0	1.6
101,778	79,884	1.5	1.8	1,567	1,438	7.0	4.2
121,856	102,707	1.0-	5.8-	1,168-	6,008-	1.9-	14.6-
75,906	91,224	4.7	3.0	3,531	2,769	12.1	9.9
53,534	67,312	2.9	5.0	1,577	3,368	8.6	13.8
91,066	60,031	3.3	2.2	3,008	1,305	9.8	8.2
68,927	73,055	0.5	8.0	331	5,843	1.2	14.9
116,935	88,927	8.3-	0.5	9,662-	455	597.3-	1.9
70,735	81,465	3.3	3.2	2,312	2,569	18.7	13.0
81,015	81,457	10.0	10.2	8,081	8,311	20.9	18.1
153,211	120,429	3.8	5.9	5,840	7,073	12.2	17.0
68,457	75,634	5.2	9.8	3,546	7,389	11.7	17.6
82,885	80,735	2.9-	2.8	2,420-	2,276	8.7-	6.2
79,451	63,115	5.1	9.0	4,058	5,672	25.6	25.9
105,016	88,013	7.2	6.0	7,584	5,276	20.9	13.9
92,740	**119,481**	**2.0**	**3.8**	**1,877**	**4,582**	**8.8**	**10.8**

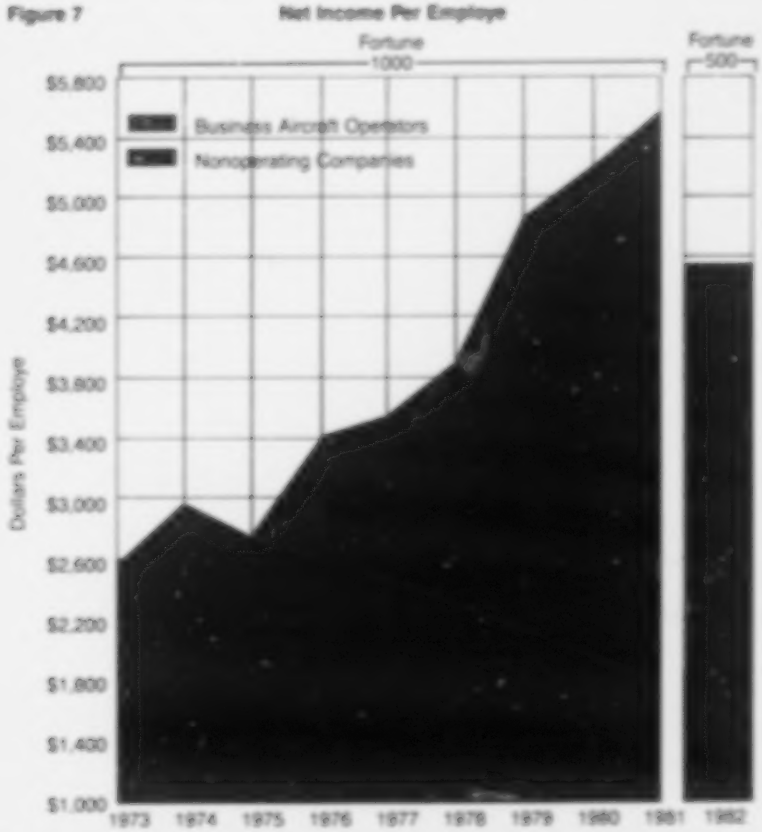
Figure 6

Business Aircraft Fleet Value ($ thousands)

	1980	1981	1982
Piston			
Single Engine	$ 5,454.6	$ 7,114.0	$ 6,597.9
Light Piston Twin	15,583.8	15,923.0	10,319.9
Pres. Piston Twin	11,922.7	11,311.4	6,427.2
Heavy Piston Twin	1,577.6	1,538.6	1,229.6
Pres. Piston four-eng.	139.7	135.5	0
Total	$34,678.4	$36,025.5	$24,574.6
Turboprop			
Light Turboprop	$287,305.6	$344,768.2	$254,364.7
Heavy Turboprop	98,722.5	101,861.3	87,825.1
Total	$386,028.1	$446,629.5	$342,189.9
Jet			
Light Jet (under 12,500 lb)	$ 75,376.9	$ 75,620.6	$ 43,904.8
Medium Jet (12,500 to 30,000 lb)	1,137,749.0	1,623,377.2	1,308,891.8
Heavy Jet (over 30,000 lb)	1,510,856.2	1,818,004.5	2,246,638.4
Total	$2,723,982.1	$3,517,002.3	$3,599,435.0
Helicopter			
Piston Helicopter	$ 333.8	$ 415.2	$ 423.0
Single Turbine Helicopter	30,017.3	41,222.0	35,132.7
Twin Turbine Helicopter	29,967.7	69,177.8	110,360.7
Total	$60,318.6	$110,815.0	$146,916.4
Grand Total	**$3,205,007.4**	**$4,110,472.3**	**$4,113,115.8**

Figure 7

Net Income Per Employe



The disparity in net income per employe between the *Fortune* 500 aircraft operators and nonoperators was staggering in 1982, supporting the theory that during particularly difficult economic times, aircraft operators outperform the nonoperators.

ture by aircraft type breaks down like this: turbine airplanes, 1975; turboprop airplanes, 1974; piston airplanes, 1971; turbine helicopters, 1976; and piston helicopters, 1970.

The composite 1982 *Fortune* 500 business aircraft fleet was worth $4.113 billion at the end of 1982, making the average aircraft within the *Fortune* 500 fleet worth $2.08 million.

Forty four airframe manufacturers are represented within the 1,977 aircraft in the 1982 *Fortune* 500 fleet, 29 of those still compete today. The competition is indeed tough. Beech and Cessna tied for top corporate honors as each had manufactured 287 aircraft used by the top 500 industrials. Gulfstream Aerospace came in third with 214 aircraft of various nomenclature. Dassault placed fourth with 178 Falcons; Gates Learjet claimed 138 aircraft; 141 Bell helicopters were operated by the *Fortune* 500; and Rockwell had placed 128 Sabreliners and one single engine piston airplane among these companies by the end of 1982. All the remaining manufacturers had fewer than 100 aircraft operating within the 500 by the close of 1982.

The *Fortune* 500 corporations are traditionally broken down into 26 categories that cover all areas of industrial production. The highest concentration of aircraft operators within any category can be found in the mining and crude-oil, and the leather production groups.

The largest concentration of aircraft operators within any category can be found among petroleum refiners. Thirty two of the 39 oil refiners in the *Fortune* 500 operate aircraft. While these firms make up only 7.8 percent of the 500 companies on the *Fortune* list, they represent 8.8 percent of the aircraft operators and fly 18.5 percent of the *Fortune* fleet. Compared with all the other *Fortune* companies, the refining companies that operate aircraft account for 29.9 percent of the sales, 34.8 percent of the net income, 29 percent of the assets, 28 percent of the stockholders' equity but only 8.4 percent of the employes.

Over the years that this study has been conducted, consistent and overwhelming statistical evidence has developed that the financial performance of the top U.S. industrial corporations is heavily biased against those companies that do not operate aircraft. While the reason for this is not entirely clear, the majority of corporations that are considered "best managed" and which turn in the best financial performance year after year are those that operate business aircraft.

It would be a fair guess that these successful corporations will continue to be the most profitable ones during the 1980s and that they will further their leadership into the next decade as well. □

Supercorporation Aircraft Fleet
Census

Company	Fortune Rank	Aircraft Number	BCA Code
A E Staley Manufacturing	218	1	HJ
		1	LTP
		4	MJ
Abbott Laboratories	152	1	LTP*
		1	MJ
Adolph Coors	312	1	MJ
Air Products & Chemicals	223	1	LJ
		1	MJ
Avco	271	1	LJ *
		1	MJ
Allegheny International	142	3	HJ
		1	LTP*
		2	MJ
		1	PPT*
Allied	49	5	MJ
Allis-Chalmers	217	2	MJ
Alumax	294	1	LJ *
		1	LTP*
Aluminum Co of America	74	1	HJ
		1	HTP
		1	LTP
		3	MJ
		1	MJ *
		1	PPT*
Amax	161	3	HJ
		1	LTP*
		1	MJ
		1	MJ*
		1	TH*
		1	TTH
Amdahl	453	1	MJ
Amerada Hess	40	3	HJ
		1	MJ
American Bakeries	436	1	LTP
American Can	89	1	HJ
		1	MJ
American Cyanamid	113	1	HJ
		2	MJ
American Petrofina	171	1	LJ*
		1	MJ*
		1	SE*
American Standard	178	1	HJ
		1	LTP
		2	MJ
AMF	269	1	LPT
		2	MJ
AMP	216	1	LPT
		5	LTP
		2	MJ
Amstar	240	1	MJ
Anchor Hocking	314	1	LTP*
		1	MJ
Anheuser-Busch	77	1	MJ*
		2	HJ
		1	HJ*
		1	LTP*
		2	MJ
		2	MJ*
		2	SE*
Archer Daniels Midland	102	1	LTP
		2	MJ
Armco	61	2	HJ
		1	LTP
		5	MJ
		2	TH*
Armstrong World Industries	252	2	HTP
		1	MJ
Arvin Industries	442	3	HPT*
		1	LPT*
		1	MJ*
		1	PPT*
Asarco	245	1	HJ
Ashland Oil	36	1	HJ*
		3	LTP
		3	MJ
		1	MJ*
		1	SE
		1	TH
Atlantic Richfield	12	4	HJ
		1	HPT
		1	LJ*
		2	LPT
		1	LTP
		9	MJ
		1	PPT*
		7	SE*
Avon Products	129	1	MJ*
B F Goodrich	128	1	HJ
		1	HTP
		1	LTP
		1	MJ
Baker International	156	1	LPT*
		1	LTP*
		1	PPT*
		3	SE*
		2	TH*
Ball	316	2	LTP
		1	PPT
Bangor Punta	395	9	LPT*
		2	LTP
		3	LTP*
		1	PPT*
		2	SE*
Barnes Group	484	1	LTP
Bausch & Lomb	446	1	LTP
Baxter Travenol Laboratories	209	1	MJ
Beatrice Foods	35	1	LTP
		2	LTP*
		1	MJ*
		1	PPT
Becton Dickinson	277	1	HJ
		1	LTP
		1	MJ
Bemis	376	1	MJ
Bendix	86	2	HJ
		1	HTP*
		1	LJ
		1	LJ *
		1	LPT
		3	LPT*
		4	LTP
		3	MJ
		1	MJ *
		2	SE *
		1	TH
		1	TTH
Bethlehem Steel	64	1	HJ
		2	HTP
		1	MJ
Big Three Industries	348	1	HJ
		1	LJ
		1	LTP*
		1	MJ
Black & Decker Manufacturing	251	2	MJ
Blue Bell	248	1	HTP
		1	LTP
Boeing	34	2	HJ
		3	LJ
		1	MJ
		3	SE
		3	TTH
Boise Cascade	137	1	HJ
		1	LTP
		1	MJ
		1	TH *
Borden	84	1	HJ
		1	LTP
		1	LTP*
		1	SE *
Borg-Warner	120	3	LTP
		2	LTP*
		1	MJ
		1	PPT
Briggs & Stratton	392	1	LTP
		1	MJ
Bristol-Meyers	104	5	HJ
		1	LTP*
		1	MJ
Brockway	337	2	HTP
		1	LPT
		1	LTP
		1	MJ*
Brunswick	274	1	LTP
		1	MJ
Bucyrus-Erie	375	1	LTP*
		2	MJ
		1	MJ*
Burlington Industries	140	1	HJ
		1	LJ
		3	MJ
Burroughs	85	1	HJ
		2	MJ

Company	Fortune Rank	Aircraft Number	BCA Code
Butler Manufacturing	497	1	LTP
		1	MJ
Cabot	220	1	MJ
Cameron Iron Works	270	2	HJ
		1	HTP
		1	LPT
		1	LTP
		1	MJ
Campbell Soup	135	1	MJ
Carpenter Technology	458	1	LJ
Caterpillar Tractor	45	3	MJ
CBI Industries	260	1	LTP*
		2	MJ
		1	TH*
Ceco	472	1	LPT*
		1	MJ*
Celanese	126	2	HJ
		1	LPT*
		1	LTP*
		1	MJ
Central Soya	198	1	LTP
		1	MJ
Certainteed	333	1	MJ
Cessna Aircraft	332	2	LPT
		1	LTP
		1	MJ
		3	PPT
		3	SE
		2	SE*
CF Industries	311	2	MJ
Champion International	101	2	HJ
		1	MJ
Champion Spark Plug	345	1	HJ
		1	HTP
		2	MJ
Charter	88	2	HJ
		3	MJ
Chesebrough-Ponds	211	1	HJ
Chromalloy American	263	1	HJ*
		1	MJ*
Clark Equipment	292	2	MJ
Clorox	326	2	HJ
		1	LTP*
Cluett Peabody	325	1	MJ
Coastal	54	1	HJ
		2	LJ*
		1	LPT
		2	LTP
		5	MJ
		3	MJ*
		1	SE*
		1	TH*
Coca-Cola	48	4	HJ
		1	MJ
Colgate-Palmolive	70	2	HJ
		1	TTH
Collins & Aikman	380	1	LTP
Combustion Engineering	105	4	HJ
		1	MJ
		1	SE
Conagra	202	1	MJ
Consolidated Foods	51	2	LPT*
		1	LTP*
Continental Group	67	3	MJ
		2	MJ*
Cooper Industries	162	1	LJ*
		4	LTP
		1	LTP*
		1	MJ
		1	MJ*
		1	SE*
Cooper Tire & Rubber	493	1	LTP
		1	MJ
Corning Glass Works	222	2	HTP
		2	MJ
		1	MJ*
Crane	275	1	HJ
		1	MJ*
		1	PPT
Crown Central Petroleum	197	1	MJ
Crown Cork & Seal	243	1	HJ
Crown Zellerbach	133	2	LPT*
		1	MJ
Cummins Engine	221	1	HTP
		2	MJ
Cyclops	321	1	MJ
Dan River	440	1	LTP
Dana	160	1	HJ
		2	LTP
		4	MJ
		1	TTH
Dart & Kraft	30	7	MJ
Dayco	368	1	LTP
Deere	75	2	HJ
		1	LJ
		3	MJ
Deluxe Check Printers	427	1	MJ
Diamond Shamrock	121	2	HJ
		5	MJ
		1	TH*
Digital Equipment	95	1	LPT
		3	LTP
		1	MJ
		9	TH
Dorsey	473	1	MJ*
Dover	290	1	LTP*
Dow Chemical	27	1	HJ
		1	HTP*
		4	LTP
		3	LTP*
		3	MJ
		2	SE*
Dow Corning	386	1	LTP
		2	MJ
Dow Jones	360	2	HJ
		1	LJ*
		1	MJ*
		1	TTH
Dresser Industries	83	5	HJ
		7	SE
E I Du Pont De Nemours	8	6	HJ*
		2	HPT*
		1	HTP
		3	HTP*
		4	LTP
		7	LTP*
		3	MJ
		1	MJ*
		1	SE
		1	TH*
		1	TTH
		1	TTH*
Eagle-Picher Industries	436	1	LTP
		1	MJ
Easco	499	1	MJ
Eastman Kodak	26	1	HJ
		1	HTP
		2	HTP*
Eaton	147	7	MJ
Echlin	457	1	LTP
EG&G	341	3	HJ
		2	HTP
		2	LPT
		1	LPT*
		1	LTP
E-Systems	355	1	LTP*
		1	MJ*
Eli Lilly	132	3	HJ
		1	HTP
		2	LPT*
Emerson Electric	110	1	HJ
		1	LTP
		3	LTP*
		3	MJ
		1	MJ*
		1	SE*
		1	TH*
		1	TTH
Emhart	201	1	LTP*
Esmark	117	3	HJ
		1	LTP*
		5	MJ
Ethyl	216	1	HJ
		1	MJ
		1	MJ*
Ex-Cell-O	291	1	LTP
Exxon	1	7	HJ
		2	LJ*
		1	MJ
		2	MJ*
		1	SE*
		1	TH
		12	TH*
		2	TTH*
Fairchild	281	1	LPT*
		5	LTP
		6	LTP*
		1	SE
Federal Co	266	5	LTP*
		1	MJ
Federal Paper Board	445	1	MJ
Federal-Mogul	358	1	LJ
		1	LTP
Fieldcrest Mills	455	1	MJ
Figgie International	367	1	HJ
		1	LJ
		1	LPT*

Company	Fortune Rank	Aircraft Number	BCA Code
		1	MJ
Firestone Tire & Rubber	96		
		2	MJ
Flowers Industries	470		
		2	LPT
		2	LTP
FMC	111		
		1	HJ
		3	MJ
Ford Motor	5		
		2	HJ
		4	HTP
		2	MJ
Fort Howard Paper	433		
		1	MJ
Freeport-McMoran	356		
		1	HJ
		1	HPT
		1	LTP*
Fuqua Industries	399		
		1	MJ
		1	MJ*
G D Searle	288		
		1	LTP
G Heileman Brewing	323		
		1	LPT
		1	MJ
Gannett	229		
		1	HJ
		1	LTP*
		2	MJ
		1	MJ*
		3	TH*
Gates Learjet	428		
		1	LPT
		1	LPT*
		1	LTP*
		4	MJ
		1	MJ*
		1	PPT*
		5	SE*
General Dynamics	46		
		4	HJ
		1	LTP*
		2	MJ
		1	MJ*
General Electric	11		
		2	HJ
		2	HTP
		1	LJ*
		1	LPT*
		3	MJ
		1	MJ*
		1	TH*
		2	TTH
General Foods	39		
		1	HJ
		2	LTP*
		2	MJ
General Mills	63		
		1	HJ
		1	LJ*
		1	LPT*
		1	MJ
		3	MJ*
General Motors	2		
		2	HJ
		3	HTP
		4	LTP
		3	MJ
General Signal	212		
		1	MJ
General Tire & Rubber	179		
		1	HTP
		1	LTP
		2	MJ
		2	MJ*
Genesco	382		
		1	LPT
		1	MJ
Geo A Hormel	239		
		1	MJ
Georgia-Pacific	62		
		1	HJ
		4	LJ
		1	LPT
		1	LTP*
		2	MJ
		1	SE*
		5	TH
Geosource	343		
		1	HJ
		1	LTP
		2	MJ
		1	SE
Gerber Products	369		
		2	LTP
		1	MJ
Getty Oil	24		
		1	HJ*
		1	LTP*
		3	MJ*
Gifford-Hill	471		
		1	MJ*
Gillette	172		
		1	HJ
Gold Kist	230		
		1	LTP
Goodyear Tire & Rubber	37		
		1	HTP
		1	LPT
		1	LTP*
		3	MJ
		1	MJ*
		4	SE
Gould	181		
		2	MJ
Great Northern Nekoosa	238		
		1	LPT*
		3	LTP*
		1	MJ*
Greyhound	78		
		2	HJ*
Grumman	177		
		1	HJ
		2	HTP
		1	LPT
		1	LTP
		1	TTH
Gulf & Western Industries	60		
		1	HJ
		1	LPT
		1	LPT*
		1	LTP
		1	MJ
		6	MJ*
		1	PH
		1	SE
		1	TH
		2	TH*
		1	TTH*
Gulf Oil	9		
		3	HJ
		1	LPT
		1	LTP
		1	LTP*
		1	MJ
H J Heinz	103		
		2	HJ
		1	LPT*
H K Porter	468		
		1	HJ
		1	MJ
Hammermill Paper	242		
		1	MJ
Harnischfeger	479		
		1	MJ
Harris	199		
		1	LTP*
		2	MJ
Harsco	297		
		1	LTP
		2	MJ
Hart Schaffner & Marx	329		
		1	LTP*
Hercules	159		
		1	HJ
		1	MJ
Hershey Foods	224		
		1	LTP
		1	MJ
Heublein	204		
		1	MJ
Hewlett-Packard	81		
		2	LPT
		3	MJ
Holly	432		
		1	SE
Honeywell	59		
		4	HJ
Hoover	387		
		1	MJ
Hoover Universal	409		
		1	MJ
Hughes Tool	218		
		1	HJ
		1	HTP
		2	LTP
		1	LTP*
		1	MJ
		1	PH
		1	PPT*
		3	SE
		1	SE*
Hyster	410		
		1	LTP
IC Industries	94		
		1	LPT
		2	LTP*
		5	MJ*
		3	SE*
Ingersoll-Rand	144		
		1	HJ
		1	LTP*
		1	MJ
		1	TH*
Inland Steel	143		
		1	LJ
		1	LTP
Interco	148		
		1	LJ*
		1	MJ*
		2	PPT*
Interlake	349		
		1	MJ
		1	SE*
International Business Machines	6		
		2	HJ
		1	HJ*
		4	MJ
		2	MJ*
		2	TTH
International Minerals & Chemicals	200		
		1	LPT
		1	LTP
		1	MJ
		1	SE
		1	TH*
International Multifoods	268		
		2	MJ
International Paper	91		
		1	HJ
		2	LJ
		1	LTP*
		4	MJ
		2	PH*
		2	SE
		2	TH
International Telephone & Telegraph	16		
		4	HJ
		1	HJ*
		4	HTP
		1	LPT*
		3	LTP*
		1	MJ
		1	MJ*
J P Stevens	195		
		1	MJ
James River Corp of Virginia	347		
		1	MJ
Jim Walter	185		
		1	HJ
		1	MJ
Johnson & Johnson	55		
		2	HJ
		3	MJ
		1	TH
		1	TTH
Johnson Controls	255		
		1	LTP*
Joseph E Seagram & Sons	225		

Company	Fortune Rank	Aircraft Number	BCA Code
		3	HJ
		1	LTP
		1	MJ
		1	SE
		1	TTH
Joy Manufacturing	282		
		2	MJ
		1	TTH
Kaiser Aluminum & Chemical	138		
		1	LJ
		1	MJ
Kaiser Steel	359		
		1	MJ
Kane-Miller	351		
		1	LPT*
Kellogg	164		
		1	HJ
		1	MJ
Kellwood	400		
		1	LTP
		1	MJ*
Kerr-McGee	99		
		3	MJ
Kidde	150		
		1	LTP*
		3	MJ*
		1	PPT*
Kimberly-Clark	134		
		2	LJ
		1	LPT
		1	LTP*
		5	MJ
Knight-Ridder Newspapers	246		
		1	HJ
		1	LTP
Koppers	208		
		1	HJ
Land O'Lakes	100		
		1	LPT
Lear Siegler	233		
		1	HJ
		1	HTP*
		1	LTP*
Libbey-Owens-Ford	280		
		1	LJ*
		1	LTP*
		1	MJ*
Litton Industries	68		
		1	HJ*
		2	HPT*
		1	LJ*
		7	LPT*
		2	LTP
		1	MJ
		1	MJ*
		1	PPT*
		1	SE*
		1	TH*
Lockheed	56		
		2	HJ
		1	HPT
		2	LPT
		1	LPT*
		2	LTP
		2	MJ*
Lone Star Industries	327		
		1	HJ
Louisiana Land & Exploration	265		
		1	HJ
		1	MJ
Louisiana-Pacific	322		
		1	HJ
		3	LJ
		2	LPT
		3	MJ
		3	TH
LTV	65		
		1	HTP*
		1	LTP*
		1	MJ*
		1	TH*
M/A-Com	406		
		1	LJ*
		2	MJ*
Magic Chef	385		
		1	LTP*
		1	MJ
Manville	187		
		1	HJ
		2	MJ
		1	MJ*
		1	TH
Mapco	183		
		1	LTP
		2	MJ
Marcor	477		
		1	MJ
		1	TH
Marmon Group	203		
		1	LPT*
		1	LTP*
		1	TH*
Martin Marietta	108		
		2	HJ
		1	LJ
		1	MJ
Masco	330		
		1	HJ
		2	LPT*
		3	LTP
		2	LTP*
		2	MJ
Masonite	481		
		1	PPT*
Maytag	462		
		1	LTP
McCormick	363		
		1	LTP
		1	PPT*
McDermott	72		
		2	HJ
		4	LPT
		2	LTP
		3	MJ
		3	SE
McDonnell Douglas	43		
		2	LTP
		2	MJ
McGraw-Edison	170		
		1	HJ
		1	HJ*
		1	LTP
		2	MJ
		1	MJ*
McGraw-Hill	262		
		1	TH*
Mead	149		
		3	MJ
Media General	495		
		1	LPT
		1	LTP
Merck	125		
		1	LTP*
Meredith	174		
		2	LTP
		2	MJ
Mid-America Dairymen	253		
		1	LTP
Midland-Ross	334		
		1	LPT
		1	LTP
		2	MJ
Miles Laboratories	350		
		2	LTP
		1	MJ
Minnesota Mining & Manufacturing	44		
		5	HJ
		2	HTP
		1	LPT*
		1	LTP*
		1	PH*
		3	SE*
		1	TH*
		1	TTH*
Mitchell Energy & Development	285		
		1	LTP*
Mobil	3		
		5	HJ
		2	LJ
		1	LJ*
		1	LTP
		2	LTP*
		3	MJ
		3	MJ*
		5	SE*
		9	TH
		1	TH*
Monfort of Colorado	296		
		1	LTP
Monsanto	47		
		1	HJ
		1	LTP*
		1	MJ
Moore McCormack Resources	419		
		1	LTP*
		1	MJ
		1	MJ*
Morton Norwich Products	295		
		1	HJ
		3	MJ*
		1	PPT*
Motorola	98		
		1	HJ
		2	MJ
Murphy Oil	151		
		1	LJ
		1	LJ*
		1	MJ
Nabisco Brands	52		
		3	MJ*
Nalco Chemical	390		
		1	MJ*
		1	SE
		2	SE*
National Can	226		
		1	MJ
National Distillers & Chemical	232		
		2	HJ
		1	HTP
		1	TH*
National Gypsum	306		
		1	HJ
		1	LPT*
National Steel	127		
		2	HJ
		1	LPT*
		1	LTP*
		1	MJ
		1	MJ*
		1	TH*
		1	TTH*
Natomas	214		
		2	HJ
		1	MJ*
NCR	109		
		1	LTP
		2	MJ
New York Times	307		
		2	MJ
NL Industries	174		
		1	HJ
		1	HTP*
		3	LTP
		1	LTP*
		2	MJ
		6	SE*
North American Coal	461		
		1	LTP
Northrop	158		
		2	HJ
		2	LPT
		1	LPT*
		2	LTP
		1	LTP*
		1	MJ
		1	PH*
		1	SE*
		1	TH*
Northwest Industries	166		
		1	MJ
		4	MJ*
		1	PPT
		1	SE*
Norton	254		
		1	HJ
Norton Simon	124		
		2	HJ
NVF	338		
		1	HJ*
Occidental Petroleum	15		
		2	HJ
		1	HJ*
		1	HTP*

Company	Fortune Rank	Aircraft Number	BCA Code
		2	LPT*
		6	LTP*
		1	MJ
		8	MJ*
		4	TH*
Ogden	175		
		1	HJ
Olin	193		
		1	HJ
		1	MJ
Outboard Marine	346		
		1	HTP
		1	LTP
Owens-Corning Fiberglass	163		
		1	HJ
		1	HTP
		2	MJ
Owens-Illinois	107		
		2	HJ
		2	HTP
Oxford Industries	488		
		1	LPT
Pabst Brewing	389		
		1	LJ
Paccar	259		
		2	MJ
Palm Beach	456		
		1	MJ
Peabody International	460		
		1	LPT*
		1	TH*
Penn Central	123		
		4	LTP*
		2	MJ*
		1	TH*
Pennwalt	303		
		1	LTP
		1	MJ
Pennzoil	169		
		3	HJ
		1	HTP
		1	SE
Pepsico	41		
		2	HJ
		1	LTP*
		1	MJ
		1	MJ*
		2	SE
Pfizer	114		
		4	MJ
		1	TH
Phelps Dodge	301		
		1	MJ*
Philip Morris	32		
		3	HJ
		4	HTP
		4	MJ
Phillips Petroleum	17		
		2	HJ
		1	LTP*
		5	MJ
		5	SE
Pillsbury	115		
		2	MJ
Potlatch	335		
		1	LPT
		1	LTP
		1	MJ
PPG Industries	118		
		1	HJ
		1	HTP
Procter & Gamble	23		
		4	HJ
		1	LJ*
		3	MJ
		2	SE*
Quaker State Oil Refining	309		
		1	LTP
R J Reynolds Industries	25		
		1	HJ
		2	MJ
		4	MJ*
R R Donnelley & Sons	241		
		1	MJ
Ralston Purina	71		
		1	HTP
		2	MJ
Raytheon	58		
		1	LPT
		2	LPT*
		1	LTP
		6	LTP*
		1	MJ
		2	MJ*
		1	SE
		2	SE*
Republic Steel	145		
		1	HJ
		2	MJ
		1	PPT*
		7	SE*
Revlon	165		
		1	HJ
Rexnord	305		
		1	LTP*
		2	MJ
Reynolds Metals	130		
		2	HJ
		2	MJ
Rockwell International	42		
		1	HJ
		2	HTP
		2	HTP*
		3	LPT*
		5	LTP
		2	LTP*
		7	MJ
		3	MJ*
		1	PH
		2	PPT
		4	SE
		6	SE*
		4	TH*
		3	TTH
Roper	494		
		1	LPT
		1	LTP
		1	MJ
		1	PPT
Royal Crown Companies	465		
		1	MJ
Savannah Foods & Industries	483		
		1	LTP
		1	MJ
Schering-Plough	194		
		1	LTP*
		1	SE*
SCM	188		
		1	LJ
		1	PPT
Scott & Fetzer	403		
		1	LTP
		1	MJ
Scott Paper	167		
		1	HJ
		1	HTP
Scovill	373		
		1	MJ
Shell Oil	13		
		3	HJ
		2	LTP
		5	MJ
		1	TH
Sheller-Globe	449		
		1	LTP
		1	MJ
Sherwin-Williams	190		
		1	MJ
Signal Companies	69		
		1	HJ*
		1	HPT*
		1	LPT*
		6	LTP*
		5	MJ*
		1	SE*
		2	TH*
		1	TTH*
Singer	155		
		1	HJ
		1	HPT
		2	LTP*
		1	MJ
		1	MJ*
Smith International	284		
		2	HJ
		1	LTP
		1	LTP*
		4	SE*
Smithkline Beckman	131		
		1	HJ
		1	MJ
Sonoco Products	431		
		1	LJ
		1	LTP
Southwest Forest Industries	412		
		2	LTP
		1	MJ
Sperry	57		
		1	HJ
		1	LTP*
		1	MJ
		1	MJ*
		2	TTH
Springs Industries	320		
		1	TH
Square D	287		
		1	HJ
		1	LTP
St. Regis Paper	154		
		1	HJ
		1	MJ
		1	SE
Standard Oil (Indiana)	10		
		4	HJ
		2	HPT*
		1	LJ*
		1	LTP*
		1	MJ
		5	SE*
Standard Oil (Ohio)	21		
		1	HJ
		4	LTP*
		4	MJ
		4	MJ*
		1	SE*
Standard Oil of California	7		
		2	HJ
		1	HTP*
		1	LTP
		2	LTP*
		2	MJ
		1	PH*
		1	SE
		6	SE*
		24	TH*
		6	TTH*
Stanley Works	299		
		1	LTP
Stauffer Chemical	213		
		1	HJ
		1	LJ
		1	MJ
Stokely-Van Camp	408		
		1	LTP
Stone Container	498		
		1	LTP
Storage Technology	283		
		2	MJ
Sun	18		
		1	HJ
		2	LTP
		2	LTP*
		4	MJ
		2	SE
		1	SE*
		1	TTH
Sundstrand	300		
		1	HTP*
		2	LJ
		1	LPT*
		2	LTP*
		3	MJ
		1	PPT*
Sun-Diamond Growers of California	443		
		1	LPT
Superior Oil	180		
		2	HJ
		1	LTP
		1	LTP*
		1	MJ
Tecumseh Products	377		
		1	HPT
		2	LTP

Company	Fortune Rank	Aircraft Number	BCA Code
		1	MJ
Tektronix	261		
		1	PPT*
Teledyne	141		
		1	LJ
		1	LPT
		2	LTP
		2	LTP*
		3	MJ*
		1	PPT
		4	PPT*
		3	SE
		5	SE*
Tenneco	19		
		7	HJ
		1	HJ*
		2	HTP
		2	LTP*
		4	MJ
		5	TH
		4	TH*
		12	TTH
Texaco	4		
		4	HJ
		4	HPT
		1	MJ
Texas Instruments	79		
		2	HPT
		1	HTP
		4	MJ
Textron	136		
		1	LTP
		3	LTP*
		1	MJ
		1	MJ*
		1	SE
		2	TH
		7	TH*
		1	TTH
		4	TTH*
Time Inc.	106		
		1	HJ
		1	HJ*
		1	HTP
		2	LJ*
		2	LPT*
		1	LTP*
		2	MJ
		4	MJ*
		1	TH*
		1	TTH
		3	TTH*
Timken	293		
		3	MJ
Tosco	112		
		1	LTP*
		1	MJ
		1	SE*
Trane	328		
		1	LTP
		1	MJ
Trinity Industries	370		
		2	LTP*
		1	MJ
		1	MJ*
TRW	66		
		2	LTP
		3	MJ
		1	SE*
Tyco Laboratories	426		
		1	HJ
		1	MJ
		2	TTH
Tyson Foods	425		
		1	MJ
U S Gypsum	247		
		1	HJ
		1	MJ
U S Steel	14		
		3	HJ
		2	HJ*
		1	HTP*
		2	LTP*
		2	MJ
		8	MJ*
		3	SE*
		1	TTH
Union Camp	228		
		3	HJ
		1	SE*
Union Carbide	33		
		2	HJ
		1	MJ
		2	TTH
Union Oil of California	28		
		3	HJ
		1	HTP
		2	LTP
Union Pacific	53		
		1	HJ
		1	LTP*
		3	MJ
		2	MJ*
United Brands	93		
		1	HJ
		1	LPT*
		1	MJ*
United Technologies	20		
		1	HJ
		1	HJ*
		1	LPT*
		4	LTP*
		4	MJ
		4	MJ*
		1	PH
		24	TTH
Upjohn	191		
		1	HTP
		2	MJ
VF	319		
		1	LJ*
		1	LPT*
		1	LTP
		1	LTP*
		1	MJ
		1	MJ*
Vulcan Materials	362		
		2	MJ
W R Grace	50		
		3	HJ
		1	HJ*
		1	LPT*
		1	MJ
		5	MJ*
		1	PPT*
Warnaco	453		
		1	PPT
Warner Communications	92		
		1	HJ
		1	MJ
		1	SE*
		1	TTH
Warner-Lambert	119		
		1	MJ
		1	TH
		2	TTH
Western Electric	22		
		1	HJ
		1	SE*
Westinghouse Electric	31		
		2	HJ
		5	MJ
		1	TH*
Westmoreland Coal	429		
		1	LJ
		1	LPT*
		1	MJ
Westpoint-Pepperell	278		
		2	LTP
		1	MJ
Westvaco	236		
		1	LJ
		1	MJ
		2	SE
Weyerhaeuser	82		
		1	HJ
		2	LTP
		2	MJ
		6	TH
		1	TH*
		3	TTH
Wheelabrator-Frye	227		
		2	HJ
		1	MJ
		2	MJ*
		1	TTH
Whirlpool	168		
		2	HTP
		1	MJ
Williams Companies	206		
		1	LJ*
		4	MJ
		2	SE*
Wm Wrigley Jr.	413		
		1	MJ
Worthington Industries	486		
		2	MJ
		1	TH
Wyman-Gordon	463		
		1	MJ
		1	PPT*
Xerox	38		
		3	HJ
		1	HTP
		2	MJ

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SEPTEMBER 1984

Business and commercial Aviation

including COMMUTER
—Starts Opposite Page 54

Saab-Fairchild SF-340

Global Systems' New AFIS

1984 Salary Survey

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The SF-340 is the first all-new regional-corporate aircraft to be certificated, and its simultaneous validation in 10 European countries is a story in itself.

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A briefcase computer and an airborne digital radio link will tie Global GNS-1000 users to a computer center for performance and weather information.

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Good news! B/CA's 11th annual salary survey reveals that business aviation salaries nationwide were up 6.9 percent over 1983. And if the trends continue, 1985 looks to be just as rosy.

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The new flight control systems from Bendix, Collins and Sperry promise inherent safety in fail-passive digital architecture and a dazzling array of new operational modes and features.

CLEARANCE DELIVERY

Business aviation is an international endeavor. All parts of the world have a need for the advantages of on-demand transportation, be it via a private aircraft or by one of the many charter and contract companies operating business aircraft. More U.S. companies are flying their business jets overseas. And the manufacture of business aircraft seems to be involving more international companies and collaborations now than any time within recent memory.

Since its inception, B/CA has been sent to the owners and managers of business aviation aircraft wherever they were located, regardless of nationality. Currently, over 7,500 operators of business aircraft who reside outside the United States receive B/CA, and it is not unusual for us to receive several pieces of mail each month from faraway places such as Australia and South Africa.

Because of the international nature of business aviation, our coverage of stories of interest to owners and managers of business aircraft often involves traveling overseas. For example, this month's cover feature on the Saab-Fairchild SF-340 required a trip to Linkoping, Sweden to meet with Saab-Fairchild engineers and to fly the aircraft. We find that we are in a position to present

Trend Monitoring Goes Computer ____ 70
Automation is taking the drudgery out of keeping track of engine wear and tear as well as helping lower maintenance costs and enhance safety.

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B/CA looks at an IBM-based software package that generates pilot briefings and TV-type weather graphics.

Managing the Electrical Systems Emergency ____ 87
Small-aircraft electrical system emergencies can almost be eliminated by preventative maintenance and knowing how to deal with a crippled system when it goes off line.

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Neath the Spreading Torpor: Torch bemoans business aviation's seeming unwillingness to combat the creeping strangulation of the industry.

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more current and in-depth information when we go to the source of the subject than merely fitting in a flight when the subject aircraft is at an air show or on a demo tour for marketing purposes.

In another feature that reflects the international nature of business aviation (even though it only involved a visit to the West Coast of the United States), we have a feature article on the latest addition to Global System's GNS-1000 long-range navigation system.

Thus,in providing our readers this month with need-to-know information to enhance the utilization and safety of their business aircraft operations, B/CA's editors traveled more than one-third the way around the world. And next month's issue also will reflect the same involvement with the international nature of business aviation.

B/CA travels long and far to bring you, the people who are responsible for business aviation, information that benefits your operation. We go to where the action is because you deserve the best coverage possible.

THE COVER

The Saab-Fairchild SF-340 was photographed by John Dahlin of Saab-Scania. George Larson took the picture of Global's AFIS terminal, and Mike Perry created the Salary Survey illustration.

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Business and commercial Aviation

1984 B/CA Salary Survey

Salaries are up this year across the aviation spectrum, with only a few segments of the industry yet to feel the recovery. And if the economy continues to improve and inflation lays low, 1985 looks better still.

by David W. Almy

For the last two years, as business aviation has endured the worst recession in several decades, we have regrettably reported large-scale stagnation of salaries among flight departments. The aggregate salary increase for aviation personnel during the last *two* years totaled less than 0.8 percent. To put that number in perspective, just a few years earlier, aviation salaries had been rising at double-digit rates, partially as a result of an effort to compensate employes for the effects of inflation and partially because of the increased importance of aviation departments to many corporations.

This time, however, we noted that although many flight departments still had salary freezes or cuts in effect, the economic fog seemed to be lifting at most companies. And as the prospects for corporate profits improved, aviation personnel were hoping to be the beneficiaries.

It seems they have. Our latest (11th) survey of flight departments across the United States indicates that, on average, aviation salaries increased 6.9 percent nationwide since last year. Inflation in that same period increased only 4.2 percent, meaning that for the first time in recent history, aviation personnel salaries stayed ahead of inflation. Flight departments reported salary increases ranging from three to 12 percent, with the bulk of the increases falling in the four- to seven-percent range.

There are a smattering of operations still in a "freeze" condition, however. For example, business and aviation activity at some oil-related companies still has not reached the levels of just a few years ago. As one besieged chief pilot remarked, "I'm just glad to have a job."

But by and large, conditions are improving. For every flight department with a tale of woe, there were several others with expansion either in the works, or anticipated soon. One benevolent chief pilot, pointing out that a senior captain was long overdue for a raise that was now imminent, explained that the real reason why the captain hadn't received his increase was that he didn't want to "overwhelm him with taxes" just yet.

According to our survey, utilization is holding steady (although FBOs nationwide are reporting increased activity), and average load factors among the flight departments contacted are up nearly 20 percent over two years ago. One company has a go/no-go policy that requires at least 50 percent of the seats on any given airplane to be filled before the airplane is allowed to leave. In addition, the average stage length of the operators polled was up about 18 percent. Apparently, more people are flying longer trips.

The percent of noncompany passengers carried by flight departments varied from zero to 65 percent, with the average falling in the five- to 10-percent range. When noncompany passengers were carried, it was almost invariably part of a marketing effort, either transporting clients to or from a sales presentation.

Two of the flight departments B/CA

contacted were beginning scheduled service using commuter airline equipment between major company centers, adding to the small number of business operators already involved in that type of venture. Very few of our operators carried freight of any kind, with the exception of interoffice mail and spare parts. One operator had configured its Falcon 10s with a "quick-change" interior for carrying parts to keep production lines humming.

B/CA's question on the public-relations use of business aircraft caught many security-conscious chief pilots by surprise. Most reported that any mercy missions the company authorized were done without publicity. Many are members in medical transportation groups (like local burn units and the Corporate Angel Network). Although one operator got a lot of public-relations value out of their airplane in flying local city officials to a submarine dedication, business aviation remains largely a private endeavor.

The key to business aviation activity still, of course, is the economy. Concerns about interest rates, the November elections, new tax-law changes and the economy in general were voiced by several flight department chiefs. The recession of the past few years has apparently been so deep and so wrenching that it has changed the way that many companies do business, and that includes their aviation operations.

Whether business activity holds, and business aviation activity with it, remains to be seen. But for now, most aviation department heads are upbeat, thankful for some long-overdue wage increases, and happy to be flying.

The Determinants

Salary levels are set according to a myriad of factors that vary in number and magnitude from company to company. Determining individual salaries within an aviation department, as for any employe, is a business *judgment*, not a technical exercise. As such, the salaries reported here cannot be used in themselves to justify an increase or establish a base salary.

The six principal factors affecting aviation department salaries are: (1) financial health of the employer; (2) company policy; (3) tenure; (4) qualifications and responsibilities; (5) job performance and (6) geography.

The financial health of the employer is critical in determining salaries. If the employer is in the throes of a depression, no amount of cajoling will produce a significant increase in salary. Indeed, and as demonstrated during this last recession, flight department budgets are among the first to be frozen or cut. If your company is doing well, it only stands to reason that the flight department should be compensated for its contribution to the cause.

Figure 1 **Comparative Salaries 1983/1984**

	1983	1984	% Annual Increase (Decrease)
Heavy Jet (over 35,000 lb)			
Chief Pilot	$82,970	$80,780	(5.0)
Captain	45,100	47,340	5.2
Copilot	33,400	32,918	(1.4)
Chief of Maintenance	38,425	41,253	7.4
Line Mechanic	27,000	29,250	8.4
Medium Jet (13,501 to 35,000 lb)			
Chief Pilot	$40,160	$40,811	1.3
Captain	38,080	39,135	2.8
Copilot	27,929	29,402	5.3
Chief of Maintenance	36,736	34,033	(7.4)
Line Mechanic	25,640	27,322	6.5
Light Jet (up to 13,500 lb)			
Chief Pilot	$35,000	$39,000	11.4
Captain	30,500	34,996	14.7
Copilot	22,500	28,000	24.4
Chief of Maintenance	31,000	32,000	3.2
Line Mechanic	21,500	26,000	20.9
Heavy Turboprop			
Chief Pilot	$46,000	$49,000	6.5
Captain	35,010	38,000	8.5
Copilot	26,000	31,640	21.5
Mechanic	20,400	26,600	30.4
Cabin Class Piston Twin			
Pilot	$25,500	$27,000	5.9
Turbine Helicopters			
Pilot	$32,050	$36,640	12.3

Salaries were up an average of 6.9 percent over 1983 among flight departments surveyed by B/CA. This improvement follows a two-year hiatus in salary increases.

Second, company policy dictates aviation salaries. If the company has historically paid a certain amount for the services of its flight crew, oftentimes inertia is enough to keep it at that level, regardless of industry-wide evidence to the contrary. One aberration in this pattern emerged in this year's survey. Several companies reported that although their company-wide salary increase was a certain percentage, the flight department was averaging several points over that figure. The chief pilots we spoke to characterized it as reparation for being the first department to feel the budget knife when the recession started.

Third, among financially healthy companies with competitive aviation salary structures, tenure plays a major role. Among the higher salaries reported in our own charts, nearly all are for senior employes who have often been with a company for over 30 years.

Fourth, qualifications and responsibilities play a major role in setting salaries. Although ratings, licenses and degrees obviously play a large part in determining the responsibilities and pay scales of aviation managers, pilots and mechanics, there seems to be some controversy among our survey sample over the salaries due pilots and mechanics of larger aircraft vis-a-vis those of smaller and presumably less-complex aircraft. About half of the flight departments we contacted paid on a bigger-pays-better scale, much like the traditional airline practice of orienting pay scales to the size of the aircraft being flown. However, an equal number of flight departments felt that "a pilot is a pilot" and that salaries should be set irrespective of all but major differences in aircraft size or type.

Job performance is the fifth and perhaps most subjective determinant of aviation salaries. Although it is very difficult to factor into a formula such intangibles as enthusiasm and professionalism, these aspects of job performance remain a prime factor in gauging the appropriateness of salary increases.

Finally, geographical differences in the cost of living can warrant differences in the pay scales between one area and another. Statistical information on regional variations in the cost of living are available from Runzheimer & Company of Rochester, Wisconsin and the American Chamber of Commerce Researchers Association in Indianapolis.

Several of the salaries reported for out-of-production airframes had been moving up in recent years, but now seem to be declining. Perhaps this is because as these

out-of-production aircraft lose their value, they are bought by more "first-timers" to business aviation, who hire pilots at entry-level salaries. For instance, there is a declining number of earlier Learjet 20s among the *Fortune 500* companies (which offer the highest salaries in business aviation.) Used Series 20 Learjets cost significantly less than most new business jets; therefore, most of these aircraft are now being operated by companies that typically pay lower salaries.

As the older aircraft are sold off by established flight departments, the high salaries that their senior pilots accrued fall to the replacement aircraft. On the other hand, the B/CA survey revealed that pilots of recently introduced aircraft (such as the Canadair Challenger) are likely to have lower average salaries than those of older designs (like the Gulfstream G-II and G-III) of the same class.

The Survey

In late June, B/CA began contacting its control group of flight departments across the United States. The results of this year's poll of 682 aviation personnel salaries are based upon conversations with 113 flight departments.

We spoke directly to either chief pilots or aviation department managers, although in two instances (with two very large flight departments) we spoke to personnel within the compensation departments. Great effort is expended to eliminate any bias or unconscious attempt to distort the salary picture by persons who might wish to report their salaries as larger than they actually are in the hope that apparent big gains by fellow pilots would influence their boss to raise their salaries in like manner. Hence, we conduct our survey with the highest-ranking person responsible for the compensation of flight department personnel.

By talking with key personnel, we were also able to take the pulse of the industry, getting a feel of how things are going. We asked several questions related to the level of the company's aviation activity over the past year, recorded utilization statistics, and finally culled base-salary figures, from which the numbers in the accompanying charts were tallied.

Aviation personnel are categorized by primary duties, and assigned a job "slot" for the purposes of B/CA's Salary Survey. Many of the higher-salary pilots retain dual currencies in different types of aircraft, and several of the flight departments B/CA contacted reported that they employ pilots qualified in both fixed and rotary wing aircraft.

Survey scrutinizers may notice some changes in the way our numbers are tallied. For 1984, we have broken out the Falcons, Learjets and Beech King Airs into individual series. In addition, a Cessna Citation III category has been added. Along with increases being reported, this change has affected the totals, making direct comparison with last year's totals difficult. But this presentation gives a more focused look at the salaries of pilots of a particular model aircraft.

Benefits were valued as an additional 27.53 percent of the base salaries, irrespective of bonuses. (Benefits mentioned here include the costs of life, health, and loss-of-license insurance in addition to company cars, when provided.)

Nearly all of the flight departments surveyed were covered by major-medical insurance and long-term disability benefits, but a small percentage of the group were still not covered by a dental plan. This lack of dental coverage seems to be limited to smaller companies, which, although they do not have a dental plan, usually offer employes a reduced corporate rate for those services.

Several of the flight departments reported that chief pilots were either supplied with company cars or a company car allowance (in one case totaling over $6,000). Only those flight departments that are in the automobile industry provided cars or a car allowance to line pilots or mechanics.

Loss-of-license insurance remained comparatively rare. Only between one quarter and one third of the respondents have such coverage. Many companies had formal or informal retraining programs for pilots who lose their licenses.

Of particular interest this year were the bonuses given to flight department personnel. With record profits at many corporations last year and similar results expected for 1984, bonuses ranged from just under $1,000 to a staggering "over $30,000" for a chief pilot at one company. When bonuses were part of a compensation package, they were usually offered to all the employes within the flight department or within the company as a whole. While these bonuses are not incorporated in our survey results, they can add from one to 50 percent to an aviation department's salaries. As bonuses are linked to corporate performance, however, the flight departments that depend upon them face a feast-or-famine situation—in "off years" these massive bonuses disappear.

The B/CA Salary Survey is meant to be a management aid. When budgeting flight department salaries, keep in mind that the figures reported in our charts are just that—reported. B/CA's accuracy is considered to be ±5 percent of the median salaries listed.

This survey was conducted by telephone. B/CA has a control group of over 100 flight departments that we try to contact each year. We have made no effort to qualify any of those flight departments contacted as being representative of industry pay scales or fringe benefits. Originally, these flight departments were selected randomly by geographical area and type of equipment operated. To ensure confidentiality, the names of responding companies were separated from the responses. We believe that a telephone survey of aviation managers, chief pilots and compensation departments affords greater accuracy while eliminating many ambiguities and possibilities for biased results. □

Figure 2

Aircraft Utilization

	Average Load Factor	Average Stage Length (nm)	Hours Flown Per Year
Gulfstream II/III	5.3	1,008	660
Challenger CL-600/601	4.1	980	450
JetStar	3.6	450	375
Falcon 90	4.3	1,000	385
Sabreliner	3.4	578	558
Falcon 20/200	5.5	438	488
HS 125	3.0	462	521
Citation III	3.9	592	642
Learjet 55	3.2	350	700
Westwind 1/2	3.2	383	480
Learjet 35	3.4	591	447
Falcon 10/100	3.2	346	503
Learjet 20	2.6	586	345
Citation I/II	3.5	325	574
Gulfstream I	6.8	283	580
King Air 200	3.8	284	576
King Air 90/100	3.5	291	488
MU-2	3.0	251	401
Cheyenne I/II	2.8	280	275
S-76	3.8	43	580
Cabin Class Piston Twin	3.0	283	474

Figure 3

National Summary of Salaries

Turbojet/ Turbofan		Gulfstream G-II/III	Challenger CL-600/601	Lockheed JetStar	Falcon 50	Rockwell Sabreliner	Falcon 20/200	BAe HS 125
Chief Pilot	High	$80,160	$68,000	$68,000	$68,840	$74,300	$60,200	$74,000
	Median	68,840	59,000	54,480	56,800	61,250	54,500	56,000
	Low	50,160	46,000	46,000	47,510	55,800	50,000	32,400
Captain	High	$69,540	$55,000	$59,000	$59,461	$55,600	$58,508	$49,250
	Median	54,480	44,000	43,136	48,180	42,088	44,600	42,900
	Low	41,100	34,000	39,000	36,000	32,903	36,556	28,680
Copilot	High	$45,550	$34,000	$34,000	$42,194	$37,752	$44,100	$37,000
	Median	39,080	31,450	29,040	32,100	34,275	31,700	27,600
	Low	27,170	27,000	28,000	26,600	24,000	27,000	19,440
Chief of Maintenance	High	$54,600	$59,000	$59,000	$42,410	$45,240	$47,500	$47,200
	Median	46,000	39,000	39,000	41,011	40,150	37,960	38,400
	Low	33,540	34,900	35,640	31,000	36,400	33,250	30,000
Mechanic	High	$41,508	$34,000	$34,000	$37,013	$40,380	$42,000	$34,500
	Median	31,420	27,000	26,862	31,750	29,580	33,250	26,175
	Low	21,000	22,800	21,000	19,000	17,368	20,000	18,090
		Citation III	Learjet 50 Series	IAI Westwind	Learjet 30 Series	Falcon 10/100	Learjet 20 Series	Citation I/II
Chief Pilot	High	$55,083	$53,250	$52,000	$72,000	$64,500	$49,100	$49,683
	Median	51,000	49,350	45,000	44,500	49,200	37,500	39,000
	Low	40,600	38,850	32,000	35,000	47,000	34,500	35,000
Captain	High	$48,120	$52,812	$43,890	$54,400	$47,000	$44,600	$42,612
	Median	41,584	38,000	37,000	38,436	38,900	28,704	34,996
	Low	38,120	28,000	31,303	30,192	33,000	25,000	27,500
Copilot	High	$35,100	$42,000	$34,105	$32,000	$41,000	$45,600	$32,376
	Median	33,930	31,840	28,215	27,750	31,810	27,500	28,000
	Low	29,160	22,150	26,500	24,000	27,000	25,000	21,100
Chief of Maintenance	High	$43,125	$42,300	$42,700	$42,000	$41,000	$36,100	$35,100
	Median	35,100	29,500	33,005	33,180	32,000	27,000	32,000
	Low	30,300	26,000	24,500	29,500	31,006	26,511	21,000
Mechanic	High	$31,500	$34,100	$30,000	$35,000	$38,100	$35,000	$28,000
	Median	25,810	24,112	25,000	27,024	31,000	23,950	26,000
	Low	20,000	23,000	21,000	22,296	26,460	20,800	20,000
Turboprop		Gulfstream G-I	Beech KA-200	Beech KA-90/100	Mitsubishi MU-2	Piper Cheyenne I/II		
Chief Pilot	High	$54,500	$52,000	$47,250	$49,600	$45,120		
	Median	49,000	45,500	41,000	34,620	35,500		
	Low	43,780	31,800	35,000	28,000	26,585		
Captain	High	$48,070	$41,000	$34,000	$36,060	$37,000		
	Median	38,000	34,000	31,500	30,000	32,000		
	Low	27,170	28,500	27,000	22,000	29,500		
Copilot	High	$33,000	$33,000	$30,000	$34,000	$33,900		
	Median	31,600	26,000	24,150	24,000	24,000		
	Low	25,700	24,035	22,000	19,000	21,600		
Mechanic	High	$33,000	$37,000	$33,000				
	Median	26,600	24,270	22,580				
	Low	22,000	21,840	21,000				
Other Fixed Wing		Cabin Class Piston Twin						
Pilot	High	$35,000						
	Median	27,000						
	Low	19,440						
Turbine Helicopter		Sikorsky S-76	Bell 222	Agusta 109A	MBB BO-105	Bell 206	Hughes 500	Aerospatiale AStar
Pilot	High	$48,500	$42,024	$37,800	$50,000	$64,000	$37,090	$41,000
	Median	40,510	39,738	33,600	39,000	38,000	33,888	31,902
	Low	26,125	35,000	31,105	29,800	30,160	29,500	28,000
Mechanic	High	$39,600						
	Median	31,180						
	Low	25,200						

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December 1984

Business and commercial Aviation

Business Aviation and the Fortune 500

Business Aviation Within the *Fortune* 500

The numbers show a decline both in operators and aircraft among the *Fortune* 500. But the figures also sustain several theories regarding the financial advantage of aircraft operators over non-operators.

David W. Almy

by David W. Almy

Fortune magazine's annual compendium of the 500 largest U.S. industrial corporations has been informing and surprising American business since 1955. Since 1972, Aviation Data Service of Wichita has been taking those numbers and reworking them, factoring in whether the companies operate business aircraft or not. B/CA has been analyzing both compilations for as long as the two have been available, the results of which appear here for the 12th time.

A quick look at those numbers reveals a not unexpected pattern. Companies that operate business aircraft continued to match or outperform their non-operating counterparts during 1983. No one has yet to crystalize a cause-and-effect relationship between aircraft ownership and improved financial performance. If sound management is accepted as a prerequisite for strong financial performance, however, and the use of business aircraft represents sound management, then it follows that those companies operating aircraft should perform better financially than those that do not operate aircraft. That, indeed, is the case.

The economic upswing of 1983 sustained an hypothesis reported in last year's analysis: In good economic times, the disparity in financial performance between aircraft operators and non-operators closes, with a majority of the industrials sharing the benefits of economic resurgences, regardless of their business aviation activity. It is during hard times, however, that the management philosophy personified by aircraft operation reveals those companies that are more likely to prosper.

Sixty of the *Fortune* 500 lost money in 1983, and among those 60, the spilt between operators and non-operators was nearly identical to the general percentages at large. Although companies with aircraft have in the past emerged faster and surer from economic downturns than their non-operating competition, having an aircraft does not make a company immune to economic hardship.

But it doesn't hurt either. *Fortune* magazine compiled a list of all-time "superperformers"—companies that had averaged at least a 20-percent return on year-end shareholders' equity over the past decade and had been so consistent that their return never dipped below 15 percent. Only 13 companies achieved such success: American Home Products (29.5 percent), Dow Jones (26.3 percent), Mitchell Energy (26.0 percent), Smith-Kline Beckman (25.4 percent), Kellogg (24.8 percent), Deluxe Check Printers (24.1 percent), Worthington Industries (23.9 percent), Maytag (23.1 percent), Merck (21.9 percent), Nalco Chemical (21.5 percent), IBM (20.5 percent), Dover (20.3 percent) and Coca-Cola (20.3 percent). Twelve of these 13 "superperformers" operate business aircraft.

Overall, however, just under three fourths of the *Fortune* 500 operate their own aircraft. At the close of 1983, 363 corporations (72.6 percent) were involved with business aviation in one way or another, while 137 (27.4 percent) were not. These numbers reveal a drop of 10 in the number of operating companies—one of the most significant trends in several years and one possibly due in part to the "uneven" recovery.

Among the top 100 companies, only four were without company-owned business aircraft. Heading the non-operating list was American Home Products, which checked in at No. 73, American Brands at No. 79, CPC International at No. 90 and Agway at No. 98.

Those companies operating aircraft in 1983 continued to match or outperform the non-operators. In 1983, the 363 operating companies generated 91 percent of

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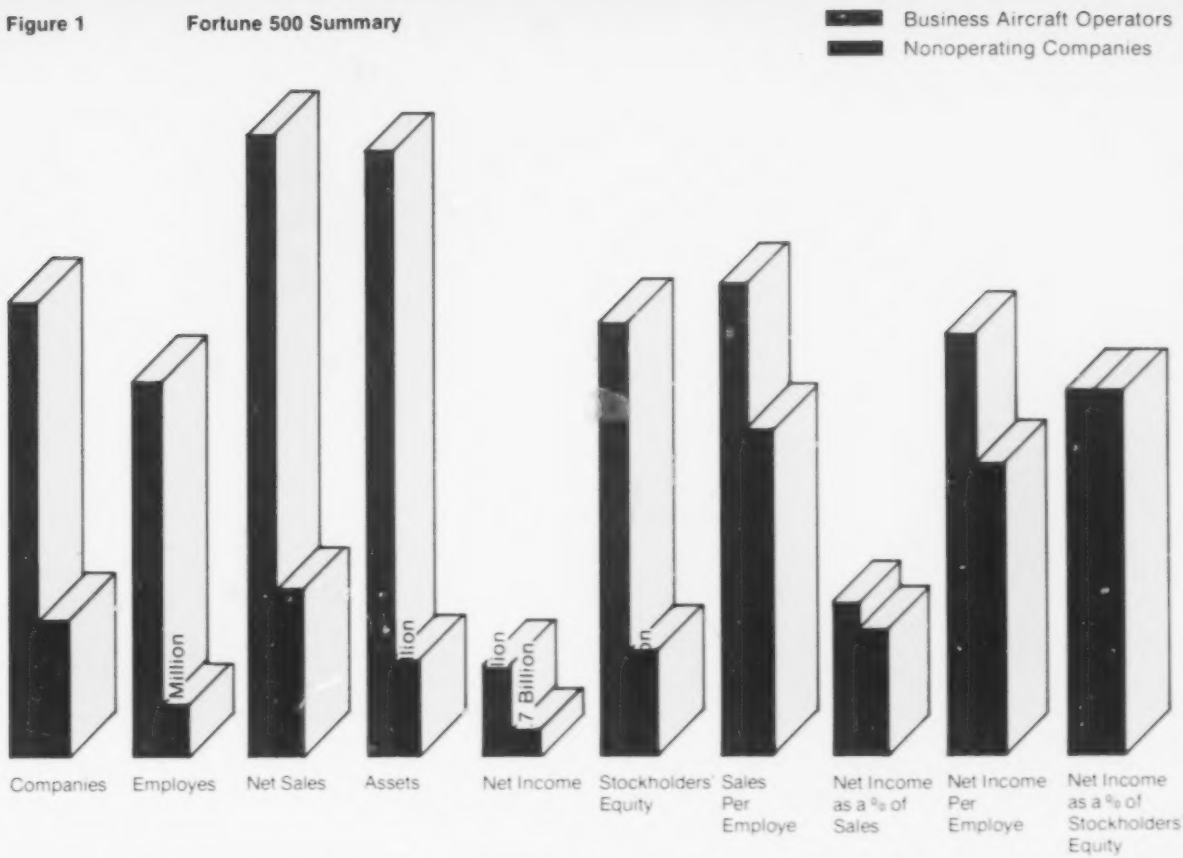
Figure 1 **Fortune 500 Summary**



Business aircraft operators matched or outperformed non-operators across the board in 1983. Consistent with past analyses, these columns graphically illustrate the size and efficiency advantages of the aircraft operators over the non-operators.

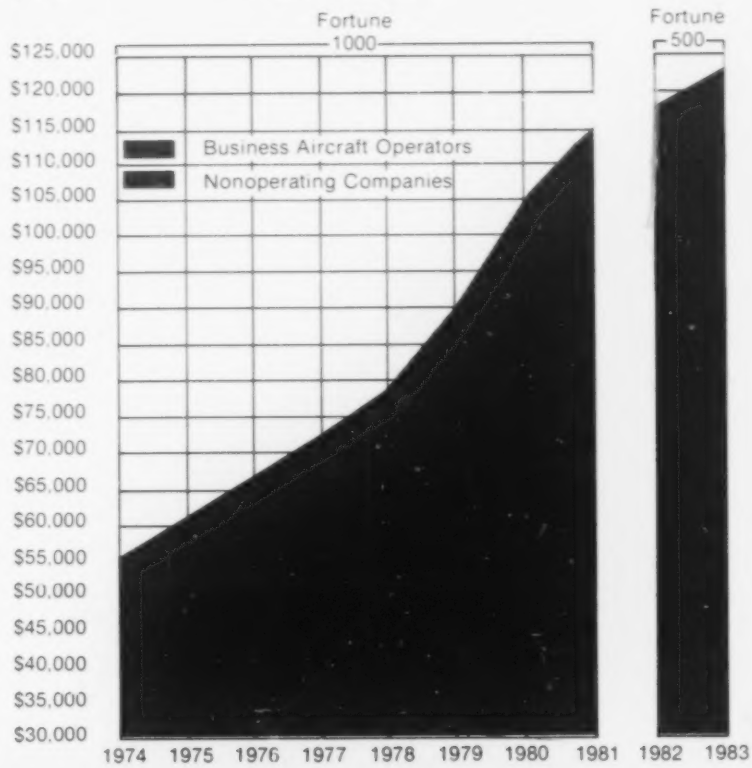
total net sales, employed 88 percent of the 14.1 million working for the *Fortune* 500 corporations, held 92 percent of the $1.35 trillion in assets, garnered 92 percent of the $68.8 billion in net income and held 92 percent of the $632 billion in stockholders' equity.

Similarly, the ranking of the operators by "per employe" comparisons reveals that aircraft operators hold similar advantages over non-operators. For example, sales per employe were 33 percent higher for aircraft operators, with net income (the true "bottom line") ahead by 45 percent for those operating aircraft.

Fleet Make-up

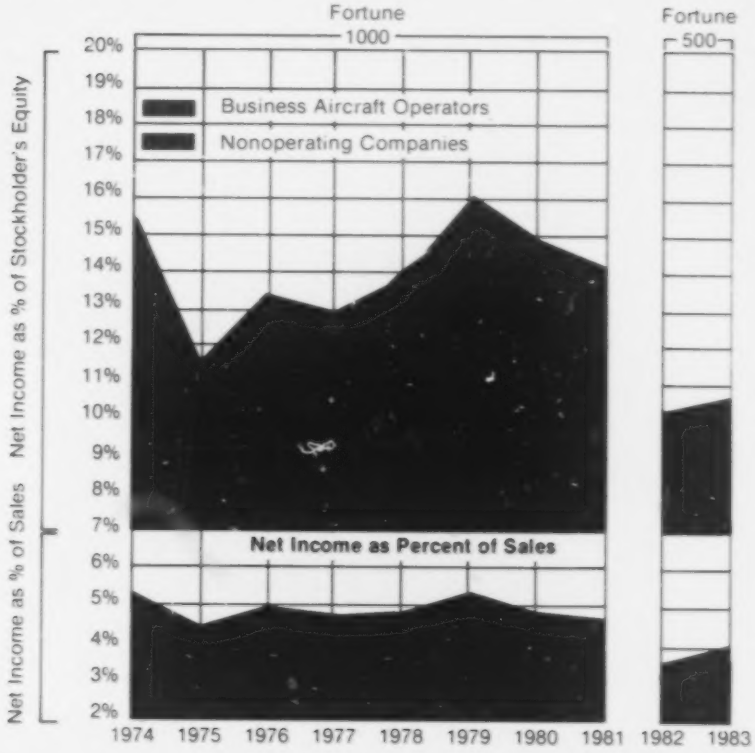
The average number of aircraft in a *Fortune* 500 corporation's fleet was just

Figure 2 **Sales Per Employe**



Until fiscal 1982, *Fortune* tracked the financial performance of the top 1,000 industrial corporations. For 1982, however, *Fortune* dropped the *Fortune* 1,000 and replaced it with the *Fortune* 500 (composed of manufacturing industrials) and the Service 500—a listing of corporations that provide services instead of manufacturing products. Although the *Fortune* 1,000/500 charts can be used to observe trends, they are not comparable except within similar statistical bases.

Figure 3 **Net Income as Percent of Stockholders' Equity**



under five in 1983—a slight decline. Nearly one quarter (85) of the operators fly only one aircraft. An even dozen operate 22 or more, with two corporations operating sizable fleets of 47 aircraft—more air capacity than that of many regional airlines.

The average fleet size of the five largest operators was 37.6 in 1983—down from 39.8 in 1982, but up from 34 in 1980.

The five largest operators and their 1982/1983 fleet sizes were: Standard Oil of California, 46/47; Rockwell International, 45/47; Tenneco 37/34; United Technologies, 40/32. Mobil, 32/28, and Atlantic Richfield, 26/28, tied for fifth place in 1983.

Forty-eight airframe manufacturers are represented within the 1,798 aircraft in the 1983 *Fortune* fleet.

More companies operated Beechcraft equipment than any other manufacturer's, although more Cessnas were operated by the *Fortune* 500 than any other aircraft. In terms of the top eight manufacturers, the *Fortune* 500 operated 263 Cessnas, 250 Beechcrafts, 228 Gulfstreams, 166 Dassault Falcons, 133 Gates Learjets, 117 Bells, 110 Rockwell Sabreliners and 45 Sikorskys.

The *Fortune* 500 corporations are traditionally broken down into 26 categories that cover all areas of industrial production. The highest concentration of aircraft

Figure 4

Comparative Fleet Size

Number of Aircraft	Number of Companies
1	85
2	70
3	55
4	33
5	17
6	23
7	17
8	6
9	7
10	15
11	3
12	4
13	3
14	5
15	3
16	3
17	2
22	3
23	1
24	1
27	1
28	2
32	1
34	1
47	2
1,798	363

Figure 5

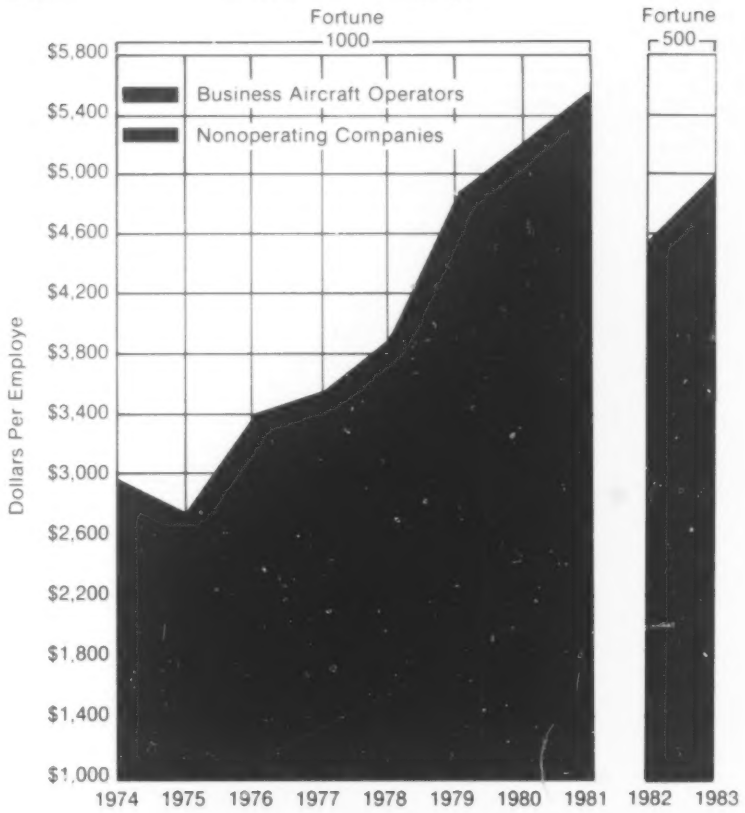
Groups	Companies		Aircraft Operated
	Non-operators	Operators	
Mining, Crude Oil Production	0	10	49
Food	20	36	117
Tobacco	1	2	17
Textiles, Vinyl Flooring	3	7	14
Apparel	2	10	37
Furniture	1	0	0
Paper, Fiber & Wood Products	5	24	107
Publishing, Printing	7	12	43
Chemicals	17	26	122
Petroleum Refining	6	30	325
Rubber, Plastic Products	3	8	30
Leather	1	0	0
Glass, Concrete, Abrasives, Gypsum	2	14	43
Metal Manufacturing	7	19	62
Metal Products	6	15	40
Electronic Appliances	15	32	173
Shipbldg., RR & Transport Equip.	3	6	35
Measuring, Scientific, Photo Equip.	7	9	32
Motor Vehicles	3	12	52
Aerospace	2	15	206
Pharmaceuticals	5	15	44
Soaps, Cosmetics	3	6	19
Office Equipment (Computers)	9	9	47
Industrial & Farm Equipment	3	35	150
Musical Instr., Toys, Sport Goods	2	3	8
Beverages	4	8	32
Average or Total	**137**	**363**	**1,798**

operators within these categories is in the "Mining, Crude-Oil Production," where 100 percent of those companies in that industrial category fly their own aircraft. "Industrial & Farm Equipment" was second, with 92 percent of the firms in that category operating aircraft. "Aerospace" and "Metal Manufacturing" were tied for third, with 88 percent of each category's operators plying the skies.

Petroleum refiners operate 18 percent of the aircraft flown by the *Fortune* 500, while aerospace companies fly 11 percent. Electronic appliance manufacturers fly 10 percent of the business aircraft flown by the *Fortune* 500, and industrial & farm equipment manufacturers fly eight percent.

Consistent and overwhelming evidence continues to mount that the financial performance of the top U.S. industrial corporations is heavily biased *against* those companies that do not operate aircraft. While the explanation for this disparity is not entirely clear, the majority of corporations that are considered "best managed" and which turn in the best financial performance year after year are characteristically those that operate business aircraft. It would follow that these successful corporations will continue to be the most profitable during the remainder of the decade and that they will further their leadership into the 1990s. □

Figure 6 **Net Income Per Employe**



Sales Per Employe		Net Income as a Percent of Sales		Net Income Per Employe		Net Income as a Percent of Stockholders' Equity	
Non-operators	Operators	Non-operators	Operators	Non-operators	Operators	Non-operators	Operators
0	315,394	0	2.2	0	6,937	0	6.1
134,595	105,270	2.0	3.2	2,710	3,331	9.7	13.1
59,952	130,444	8.8	8.3	5,274	10,866	18.7	19.3
54,086	57,696	1.9	3.1	1,001	1,775	5.6	8.3
61,274	51,336	6.4	1.3	3,909	671	17.6	3.9
54,794	0	2.0	0	1,115	0	6.4	0
96,642	116,380	4.3	3.5	4,169	4,061	10.5	7.2
80,093	98,280	8.1	7.5	6,525	7,329	17.7	17.6
149,236	139,382	3.9	3.3	5,862	4,569	11.4	7.6
278,659	415,638	0.6	4.2	1,722	17,614	4.3	11.2
100,917	78,310	3.1	2.8	3,139	2,196	10.2	8.4
48,467	0	-0.3	0	-149	0	-2.2	0
79,508	88,287	1.6	3.8	1,287	3,374	3.2	8.6
103,491	114,156	-0.3	-4.4	-337	-5,069	-0.4	-12.4
70,255	99,837	4.9	3.8	3,448	3,837	11.1	11.2
56,910	66,505	3.4	4.1	1,936	2,827	8.6	10.5
81,312	79,138	2.8	1.9	2,259	1,529	9.5	6.6
69,822	76,121	3.3	6.2	2,283	4,747	7.4	10.9
104,623	109,177	-1.9	4.2	-1,993	4,634	-14.8	18.8
101,677	89,347	6.8	3.5	6,867	3,083	22.6	13.0
96,032	86,266	10.3	10.9	8,821	9,391	20.8	19.0
174,601	125,499	2.5	6.1	4,358	7,605	9.0	17.0
78,553	83,614	5.1	10.1	3,978	8,448	11.3	17.8
70,037	74,962	3.8	0.4	2,676	297	10.5	0.8
99,406	66,264	1.8	-2.4	1,793	-1,591	9.6	-7.0
114,190	96,8?1	9.4	6.0	10,683	5,774	24.1	14.8
93,119	123,5??	3.8	4.1	3,507	5,076	10.9	10.9

Supercorporation Aircraft Fleet Census

Company	Fortune Rank	Aircraft Number	MCA Code
A E Staley Manufacturing	207	1	LTP
		3	MJ
Abbott Laboratories	137	1	LTP*
		1	MJ
Adolph Coors	278	2	MJ
Air Products & Chemicals	212	1	LJ
		1	MJ
Allegheny International	160	3	HJ
		1	LTP*
		3	MJ
		1	PPT*
Allied	29	2	HJ*
		1	HTP*
		2	LJ*
		4	LPT*
		1	LTP
		4	LTP*
		5	MJ
		2	MJ*
		1	SE*
		1	TH*
		1	TTH*
Allis-Chalmers	253	2	MJ
Alumax	230	1	LJ*
		1	LTP*
Aluminum Co. of America	65	1	HJ
		1	HTP
		1	LTP
		3	MJ
		1	MJ*
AMAX	164	2	HJ
		1	LTP*
		1	MJ
		1	TTH
Amdahl	350	1	MJ
Amerada Hess	39	2	HJ
		1	MJ
American Bakeries	460	1	LTP
American Can	117	2	HJ
		1	MJ
American Cyanamid	107	1	HJ
		1	MJ
American Petrofina	176	1	LJ*
		1	MJ*
American Standard	170	1	HJ
		2	MJ
		1	TH
AMF	303	1	MJ
AMP	228	1	LPT
		6	LTP
		2	MJ
Anchor Hocking	349	1	LTP*
		1	MJ
		1	MJ*
Anheuser-Busch	55	2	HJ
		1	HJ*
		2	MJ
		1	MJ*
		1	SE*
Archer-Daniels-Midland	83	1	HJ
		1	LTP
		2	MJ
Armco	87	2	HJ
		3	MJ
Armstrong World Industries	240	2	HTP
		2	MJ
Arvin Industries	408	3	HPT*
		1	LPT*
		1	MJ*
		1	PPT*
Asarco	229	1	HJ
Ashland Oil	45	3	LTP
		4	MJ
		1	SE
		1	TH
AT&T Technologies	26	2	HJ
		1	SE*
Atlantic Richfield	12	4	HJ
		1	HPT
		1	LJ*
		2	LPT
		1	LTP
		9	MJ
		1	PPT*
		7	SE*
		2	TTH
AVCO	179	2	HJ
		1	HPT
		2	LPT
		1	MJ
		1	PPT
Avon Products	131	1	MJ
		1	MJ*
B F Goodrich	125	1	HJ
		1	LTP
		1	MJ
Baker International	192	1	LPT
		3	SE*
Ball	315	2	LTP
		1	MJ
		1	PPT
Bangor Punta	438	9	LPT*
		2	LTP
		3	LTP*
		1	PPT*
		2	SE*
Bausch & Lomb	424	1	LTP
Baxter Travenol Laboratories	191	1	MJ
Beatrice Foods	36	1	HJ
		2	LTP
		1	LTP*
		1	PPT
Becton Dickinson	273	1	HJ
		1	LTP
		1	MJ
Bemis	373	1	MJ
Bethlehem Steel	69	1	HJ
		2	HTP
		1	MJ
Big Three Industries	385	1	HJ
		1	LTP*
		1	MJ
Black & Decker Manufacturing	265	2	MJ
Blue Bell	258	3	HTP
		1	LTP
BOC	282	1	LJ*
		1	MJ
Boeing	27	2	HJ
		3	LJ
		2	SE
		3	TTH
Boise Cascade	113	1	HJ
		1	LTP
		1	MJ
		1	TH*
Borden	85	1	HJ
		1	LTP
		1	LTP*
		1	SE*
Borg-Warner	106	1	LPT
		3	LTP
		1	LTP*
		1	MJ
		2	PPT
Briggs & Stratton	403	1	LTP
		1	MJ
Bristol-Myers	93	5	HJ
		1	MJ
Brockway	336	2	HTP
		1	LPT
		1	LTP
		1	MJ
		1	MJ*
Brunswick	260	1	LTP
		2	MJ
Bucyrus-Erie	434	2	MJ
Burlington Industries	133	1	HJ
		1	LJ
		2	MJ
Burroughs	82	1	HJ
		2	MJ
Cabot	224	1	MJ

Company	Fortune Rank	Aircraft Number	BCA Code
Cameron Iron Works	307	1	HJ
		1	HTP
		1	LTP
		1	MJ
Campbell Soup	119	1	MJ
Caterpillar Tractor	64	3	MJ
CBI Industries	337	1	MJ
CECO	469	1	MJ*
Celanese	122	1	HJ
		1	LPT*
		1	LTP*
		1	MJ
Central Soya	200	1	LTP
		1	MJ
Certainteed	288	1	MJ
Cessna Aircraft	445	2	LPT
		1	LTP
		1	MJ
		3	PPT
		3	SE
		2	SE*
CF Industries	328	2	MJ
Champion International	86	2	HJ
		1	MJ
Champion Spark Plug	354	1	HJ
		2	HTP
		2	MJ
Charter	61	2	HJ
		2	MJ
Chesebrough-Ponds	206	1	HJ
Chromalloy American	297	1	HJ*
		1	MJ*
		1	PPT
Chrysler	21	1	HJ
Clark Equipment	327	2	MJ
Clorox	314	2	HJ
		1	LTP*
Cluett Peabody	325	1	MJ
Coachman Industries	463	1	LJ
		1	LTP
Coastal	58	2	HJ
		1	LPT
		2	LTP
		5	MJ
		2	MJ*
		1	SE*
Coca-Cola	48	3	HJ
		1	MJ
Colgate-Palmolive	72	1	HJ
		1	TTH
Collins & Aikman	378	1	LTP
Combustion Engineering	129	4	HJ
		1	SE
Conagra	162	1	HJ
		1	MJ
		1	SE
Consolidated Foods	49	1	LPT*
		1	LTP*
Continental Group	68	1	MJ
		4	MJ
		2	MJ*
Cooper Industries	190	1	LTP
		3	MJ
		1	MJ*
Cooper Labs	476	1	MJ
Cooper Tire & Rubber	472	1	LTP
		1	MJ
Corning Glass Works	217	2	HTP
		1	LTP
		2	MJ
Crane	294	1	HJ
		1	MJ*
		1	PPT
Crown Central Petroleum	208	1	MJ
Crown Cork & Seal	254	1	HJ
		1	MJ
Crown Zellerbach	144	2	LPT
Cummins Engine	216	1	HTP
		2	MJ
Cyclops	290	1	MJ
Dana	139	1	HJ
		1	LTP
		5	MJ
		1	SE
		1	TTH
Dart & Kraft	33	6	MJ*
Dayco	371	1	LTP
Deere	92	2	HJ
		3	MJ
Deluxe Check Printers	400	1	MJ
Diamond Shamrock	89	2	HJ
		5	MJ
		1	TH*
Digital Equipment	84	1	LPT
		4	LTP
		1	MJ
		7	TH
Dover	292	1	LTP*
Dow Chemical	28	1	HJ
		1	HTP*
		4	LTP
		3	LTP*
		3	MJ
		2	SE*
Dow Corning	355	1	LTP
		2	MJ
Dow Jones	326	2	HJ
		1	LJ*
		2	MJ*
		1	TTH
Dresser Industries	112	3	HJ
		1	MJ
		6	SE
E I Du Pont De Nemours	7	5	HJ*
		1	HTP
		3	HTP*
		4	LTP
		7	LTP*
		3	MJ
		1	SE
		1	TH*
		1	TTH
		1	TTH*
Eagle-Picher Industries	443	1	LTP
		1	MJ
Easco	457	1	MJ
Eastman Kodak	30	1	HJ
		1	HTP
		2	HTP*
Eaton	138	7	MJ
Echlin	428	1	LTP
EG&G	318	3	HJ
		2	LPT
		1	LPT*
E-Systems	338	1	LTP
		1	MJ*
Eli Lilly	130	3	HJ
		1	HTP
		2	LPT*
Emerson Electric	111	2	HJ
		1	LTP
		2	LTP*
		3	MJ
		1	MJ*
		1	TH*
		1	TTH
Emhart	205	1	LTP*
Esmark	88	3	HJ
		3	MJ
Ethyl	197	1	HJ
		1	MJ
		1	MJ*
Ex-Cell-O	308	1	LTP
Exxon	1	7	HJ
		1	LJ*
		1	MJ
		1	MJ*
		1	TH
		4	TTH
		2	TTH*
Fairchild Industries	321	1	LPT*
		3	LTP
		6	LTP*
		1	SE*
Federal Co.	275	5	LTP*
		1	MJ
Federal Paper Board	423	1	MJ
Federal-Mogul	363	1	LTP
		1	MJ
Fieldcrest Mills	435	1	MJ
Figgie International Holdings	386	1	HJ
		1	LJ
		1	LPT*
		1	MJ
Firestone Tire & Rubber	95	2	MJ
Flowers Industries	446	1	LPT
		3	LTP
FMC	110	1	HJ
		2	MJ
Ford Motor	4	2	HJ

Company	Fortune Rank	Aircraft Number	BCA Code
		4	HTP
		2	MJ
Fort Howard Paper	347		
		1	MJ
Freeport-McMoran	346		
		1	HJ
		1	HPT
		1	LTP*
Fuqua Industries	367		
		1	MJ
		1	MJ*
G D Searle	296		
		1	LTP
G Heileman Brewing	268		
		1	LPT
		2	MJ
Gannett	203		
		1	HJ
		1	LTP*
		2	MJ
		1	MJ*
		1	TH*
General Dynamics	46		
		2	HJ
		1	LTP*
		2	MJ
		1	MJ*
General Electric	10		
		5	HJ
		2	HTP
		1	LPT*
		3	MJ
		1	MJ*
		1	TH*
		2	TTH
General Foods	41		
		1	HJ
		3	MJ
		1	MJ*
General Mills	62		
		1	HJ
		1	LJ*
		1	LPT*
		1	MJ
		3	MJ*
General Motors	2		
		2	HJ
		3	HTP
		4	LTP
		3	MJ
General Signal	220		
		1	MJ
General Tire & Rubber	168		
		1	HTP
		1	LTP
		2	MJ
		2	MJ*
Geo A Hormel	241		
		1	MJ
Georgia Kraft	449		
		1	LTP
Georgia-Pacific	51		
		1	HJ
		3	LJ
		1	LPT
		1	LTP
		2	MJ
		1	SE
		5	TH
Gerber Products	372		
		1	LTP
		2	MJ
Getty Oil	24		
		1	HJ*
		1	LTP*
		3	MJ*
Gillette	169		
		1	HJ
Gold Kist	238		
		1	LTP
Goodyear Tire & Rubber	32		
		1	HJ
		1	LPT
		2	LTP*
		4	MJ
		1	MJ*
		4	SE
Gould	198		
		2	MJ
Great Northern Nekoosa	222		
		1	LPT*
		3	LTP*
Grumman	167		
		1	HJ
		2	HTP
		1	LPT
		1	LTP
		1	TTH
Guardian Industries	468		
		1	MJ
		2	TH
Gulf & Western Industries	67		
		1	HJ
		1	LPT
		1	LPT*
		1	LTP
		2	MJ
		3	MJ*
		1	PH
		1	SE
		1	TH
		1	TH*
		1	TTH*
Gulf Oil	11		
		3	HJ
		1	LPT
		1	LTP
		1	LTP*
		1	MJ
H J Heinz	100		
		2	HJ
		1	LPT*
Hammermill Paper	214		
		1	MJ
Harris	201		
		1	LTP*
		2	MJ
Harsco	331		
		2	MJ
Harte-Hanks Communications	485		
		1	LTP
Hartmarx	304		
		2	LTP*
Harvey Hubbell	490		
		1	LTP
Hercules	148		
		1	HJ
		1	MJ
Hershey Foods	202		
		1	HJ
		1	LTP
Hewlett-Packard	75		
		1	HJ
		2	LTP
		3	MJ
Hillenbrand Industries	488		
		2	HTP
		2	MJ
Holly	484		
		1	SE
Honeywell	60		
		4	HJ
Hoover	387		
		1	MJ
Hoover Universal	351		
		1	MJ
Hughes Tool	267		
		1	HJ
		1	HTP
		1	LTP
		1	MJ
		1	PH
		1	PPT*
		3	SE
		1	SE*
Hyster	497		
		1	LTP
IC Industries	96		
		1	LTP*
		5	MJ*
Ingersoll-Rand	165		
		1	HJ
		1	LTP*
		1	TH*
Inland Steel	127		
		1	LJ
		1	LTP
Inspiration Resources	357		
		1	MJ
Interco	150		
		1	LJ*
		1	MJ*
		2	PPT*
Interlake	332		
		1	MJ
International Business Machines	5		
		2	HJ
		1	HJ*
		4	MJ
		2	MJ*
		1	TTH
International Harvester	104		
		1	MJ
International Minerals & Chemicals	237		
		1	LPT
		1	LTP
		1	MJ
		1	SE
		1	TH*
International Multifoods	274		
		2	MJ
International Paper	80		
		1	HJ
		2	LJ
		3	MJ
		2	PH*
		1	SE
		3	TH
ITT	20		
		4	HJ
		1	HJ*
		4	HTP
		1	LPT*
		1	LTP
		3	LTP*
		1	MJ
		1	MJ*
J P Stevens	186		
		1	MJ
James River Corp. of Virginia	209		
		1	MJ
Jim Walter	181		
		1	HJ
		1	MJ
Johnson & Johnson	57		
		1	HJ
		3	MJ
		2	TTH
Johnson Controls	251		
		1	LTP
		1	MJ
Joseph E Seagram & Sons	233		
		3	HJ
		1	LTP
		1	MJ
		1	SE
		1	TTH
Joy Manufacturing	390		
		2	MJ
		1	TTH
Kaiser Aluminum & Chemical	140		
		1	MJ
Kaiser Steel	396		
		1	MJ
Kane-Miller	353		
		1	LPT*
Kellogg	158		
		1	HJ
		1	MJ
Kellwood	421		
		1	LTP
		1	MJ

Company	Fortune Rank	Aircraft Number	BCA Code
Kerr-McGee	108	3	MJ
Kidde	161	3	MJ*
Kimberly-Clark	120	1	HJ
		1	HTP
		1	LPT
		1	LTP*
		5	MJ
		1	SE
Knight-Ridder Newspapers	234	1	HJ
		1	LTP
Koppers	221	1	HJ
Land O'Lakes	121	1	LPT
		1	LTP
Lear Siegler	236	1	HJ
		1	HTP
Libbey-Owens-Ford	266	1	LJ*
		1	LTP*
		1	MJ*
Litton Industries	74	1	HJ*
		2	HPT*
		1	LJ*
		7	LPT*
		2	LTP
		1	MJ
		1	MJ*
		1	SE*
Lockheed	30	2	HJ
		2	LPT
		1	LPT*
		1	LTP
		2	MJ*
Lone Star Industries	313	1	HJ
Louisiana Land & Exploration	257	1	HJ
		1	MJ
Louisiana-Pacific	279	1	HJ
		3	LJ
		1	LPT
		5	MJ
		4	TH
LTV	78	1	HTP*
		1	LTP*
		1	MJ*
		1	TH*
M/A-Com	395	3	MJ*
Mack Trucks	259	1	TTH
Magic Chef	361	1	LTP*
Manville	199	1	MJ
		1	HJ
		2	MJ
		1	MJ*
		1	TH
MAPCO	177	2	LTP
		1	MJ
Marmon Group	235	1	LPT*
		1	LTP*
Martin Marietta	94	3	HJ
		1	LJ
		1	MJ
Masco	286	1	HJ
		2	LPT*
		3	LTP
		2	LTP*
		2	MJ
Maytag	409	1	LTP
McCormick	365		
		1	LTP
		1	MJ
		1	PPT*
McDonnell Douglas	42	2	LTP
		2	MJ
McGraw-Edison	175	1	HJ
		1	HJ*
		1	MJ
McGraw-Hill	255	1	TH*
Mead	149	2	MJ
Media General	453	1	LPT
		1	LTP
Merck	124	1	LTP*
Meredith	479	1	LTP
		1	LTP*
		2	MJ
Midland-Ross	360	1	LPT
		1	LTP
		2	MJ
Miles Laboratories	277	2	LTP
		1	MJ
Minnesota Mining & Manufacturing	47	5	HJ
		2	HTP
Mitchell Energy & Development	305	1	LPT
		1	LTP
		1	LTP*
Mobil	3	3	HJ
		1	HJ*
		2	LJ
		1	LJ*
		1	LTP
		3	MJ
		1	MJ*
		1	SE
		4	SE*
		9	TH
		1	TH*
		1	TTH
Monfort of Colorado	250	1	LPT
		1	LTP
Monsanto	52	1	HJ
		1	MJ
Moore McCormack Resources	496	1	LTP*
		1	MJ
		1	MJ*
Morton Thiokol	231	1	HJ
		1	LTP
		2	MJ*
		1	PPT*
Motorola	81	1	HJ
		2	MJ
Murphy Oil	157	1	LJ
		2	MJ
Nabisco Brands	56	2	HJ*
		2	MJ*
Nalco Chemical	389	1	MJ
		2	SE
		1	SE*
National Can	210	1	MJ
National Distillers & Chemical	166	2	HJ
		1	TH*
National Gypsum	270	1	HJ
		1	LPT*
National Intergroup	132	2	HJ
		1	MJ
		1	TH*
		1	TTH*
NCR	101	3	MJ
New York Times	281	1	HJ
		1	MJ
NL Industries	239	1	HJ
		1	HTP*
		3	LTP
		3	SE
		2	SE*
Northrop	123	2	HJ
		2	LPT
		2	LTP
		1	LTP*
		1	MJ
		1	SE*
		1	TH*
Northwest Industries	183	1	MJ
		4	MJ*
		1	SE*
NVF	295	1	HJ*
Occidental Petroleum	14	3	HJ
		1	HJ*
		1	HTP*
		1	LPT*
		5	LTP*
		1	MJ
		7	MJ*
		3	TH*
Ogden	187	1	HJ
Olin	185	1	HJ
		1	MJ
Outboard Marine	344	1	HTP
		1	LTP
Owens-Corning Fiberglass	142	1	HJ
		1	HTP
		1	MJ
Owens-Illinois	115	2	HJ
		2	HTP
Oxford Industries	450	1	LPT
Pabst Brewing	376	1	LJ
Paccar	242	2	MJ
Palm Beach	467	1	MJ
Peabody International	481	1	LPT*
		1	SE*
Penn Central	151	5	LTP*
		2	MJ*
Pennwalt	301	1	LTP
		1	MJ
Pennzoil	163	4	HJ
		1	HTP
		1	SE
Pepsico	44	3	HJ
		1	LTP*
		1	MJ*
		2	SE
Pfizer	99	5	MJ
		1	TH

Company	Fortune Rank	Aircraft Number	BCA Code
Philip Morris	35		
		3	HJ
		4	HTP
Phillips Petroleum	16	3	MJ
		1	HJ
		1	LPT
		5	MJ
		4	SE
Pillsbury	102		
		1	MJ
Pittway	491		
		1	MJ
Potlatch	317		
		1	LPT
		1	LTP
PPG Industries	103	1	MJ
		1	HJ
		1	HTP
Procter & Gamble	22		
		4	HJ
		1	LJ*
		3	MJ
		2	SE*
Quaker State Oil Refining	319		
		1	LTP
R J Reynolds Industries	23		
		1	HJ
		2	MJ
		4	MJ*
R R Donnelley & Sons	226		
		1	MJ
Ralston Purina	71		
		1	HTP
		2	MJ
		4	PH
		2	TH
Raytheon	59		
		1	LPT
		2	LPT*
		1	LTP
		2	LTP*
		1	MJ
		2	MJ*
		1	SE
		2	SE*
Republic Steel	145		
		1	HJ
		2	MJ
		1	PPT*
		6	SE*
Revlon	159		
		1	HJ
Rexnord	342		
		1	LTP*
		1	MJ
Reynolds Metals	118		
		2	HJ
		2	MJ
Rockwell International	43		
		1	HJ
		3	HTP
		2	HTP*
		3	LPT*
		5	LTP
		3	LTP*
		10	MJ
		2	MJ*
		1	PH
		4	SE
		6	SE*
		4	TH*
		3	TTH
Roper	462		
		1	LPT
		1	LTP
		1	MJ
		1	PPT
Rorer Group	466		
		1	TH
Royal Crown Companies	459		
		1	MJ
Rubbermaid	487		
		1	MJ

Company	Fortune Rank	Aircraft Number	BCA Code
Savannah Foods & Industries	461		
		1	LTP
		1	MJ
Schering-Plough	194		
		1	LTP*
		2	MJ
SCM	193		
		1	LJ
		1	PPT
Scott & Fetzer	397		
		1	LTP
		1	MJ
Scott Paper	156		
		2	HJ
Scovill	366		
		1	MJ
Sealed Power	494		
		1	LTP
Shell Oil	13		
		2	HJ
		2	LTP
		5	MJ
		1	TH*
Sheller-Globe	405		
		1	LTP
		1	MJ
Sherwin-Williams	184		
		1	MJ
Signal Companies	54		
		1	HJ
		3	HJ*
		1	LPT*
		4	LTP*
		1	MJ
		8	MJ*
		1	PH*
		1	TTH
		2	TTH*
Singer	155		
		1	HJ
		1	HPT
		1	LTP
		1	LTP*
		1	MJ
		1	MJ*
Smith International	375		
		1	HJ
		1	LTP
		4	SE*
SmithKline Beckman	126		
		1	HJ
		1	MJ
Sonoco Products	383		
		1	LJ
		1	LTP
Southwest Forest Industries	380		
		2	LTP
		1	MJ
Sperry	66		
		1	HJ
		1	LTP*
		1	MJ
		1	MJ*
		2	TTH
Springs Industries	320		
		1	TH
Square D	269		
		-	HJ
		1	LTP
St Regis	141		
		1	HJ
		1	MJ
		1	SE
Standard Oil (Indiana)	8		
		4	HJ
		2	HPT
		1	LJ*
		2	LTP*
		1	MJ
		5	SE*
Standard Oil (Ohio)	25		
		1	HJ
		1	LTP*
		4	MJ

Company	Fortune Rank	Aircraft Number	BCA Code
		1	MJ*
		1	SE*
		1	TH*
Standard Oil of California	9		
		2	HJ
		1	HTP*
		1	LTP
		2	LTP*
		2	MJ
		1	PH*
		2	SE
		5	SE*
		2	TH
		23	TH*
		6	TTH*
Stanley Works	298	1	LTP
Stauffer Chemical	249		
		1	HJ
		1	LJ
		1	MJ
Stokely-Van Camp	444	1	LTP
Stone Container	391	1	LTP
Storage Technology	322	1	MJ
Sun	17		
		2	HJ
		1	LTP
		1	LTP*
		2	MJ
		2	SE
		1	TTH
Sundstrand	315		
		1	HTP*
		2	LJ
		1	LPT*
		2	LTP*
		3	MJ
Sun-Diamond Growers of California	447	1	LPT
Superior Oil	195		
		2	HJ
		1	LTP
		1	LTP*
		1	MJ
Tecumseh Products	334	3	LTP
Tektronix	253	1	PPT*
Teledyne	135		
		1	LJ
		1	LPT
		3	LTP
		2	LTP*
		3	MJ*
		1	PPT
		4	PPT*
		3	SE
		5	SE*
Tenneco	19		
		7	HJ
		1	HJ*
		2	HTP
		4	MJ
		4	TH
		4	TH*
		12	TTH
Texaco	6		
		4	HJ
		4	HPT
		1	LTP*
		1	MJ
Texas Instruments	77		
		2	HPT
		1	HTP
		4	MJ
Textron	134		
		1	LJ*
		1	LTP
		1	LTP*
		1	MJ
		1	MJ*
		1	SE

Company	Fortune Rank	Aircraft Number	BGA Code
		1	TH
		3	TH*
		1	TTH
		3	TTH*
Time Inc.	91		
		1	HJ
		1	HJ*
		1	HTP
		1	LJ*
		2	LPT*
		1	LTP*
		3	MJ
		3	MJ*
		1	TH*
		2	TTH
Timken	310		
		3	MJ
Tosco	153		
		1	MJ
		1	SE*
Trane	284		
		1	HTP
		1	LTP
		1	MJ
Tribune	218		
		1	MJ
Trinity Industries	465		
		1	LJ
		1	MJ
		1	MJ*
TRW	63		
		3	LTP
		4	MJ
		1	SE*
Tyson Foods	407		
		1	MJ
U S Steel	15		
		4	HJ
		2	HJ*
		1	HTP*
		4	MJ
		7	MJ*
		3	SE*
		1	TTH
Union Camp	204		
		3	HJ
Union Carbide	37		
		4	HJ
		1	MJ
Union Pacific	40		
		1	HJ
		3	MJ
		3	MJ*
United Brands	109		
		1	HJ
		1	LPT*
United Technologies	16		
		1	HJ
		1	HJ*
		1	LPT*
		1	LTP
		4	LTP*
		6	MJ
		4	MJ*
		1	PH
		13	TTH
Unocal	31		
		3	HJ
		1	HTP
		2	LTP
		1	MJ
Upjohn	162		
		1	HTP
		1	MJ
U S Gypsum	215		
		1	HJ
		1	MJ
VF	280		
		1	LJ*
		1	LPT*
		1	LTP
		1	LTP*
		1	MJ
		2	MJ*
Vulcan Materials	339		
		2	MJ
W R Grace	53		
		4	HJ
		1	HJ*
		1	LJ
		4	MJ*
Warnaco	456		
		1	PPT
Warner Communications	114		
		1	HJ
		1	MJ
		1	SE*
Warner-Lambert	128		
		1	MJ
		2	TTH
West Point-Pepperell	262		
		1	LTP
		1	MJ
Westinghouse Electric	34		
		4	HJ
		5	MJ
		1	TH*
Westmoreland Coal	437		
		1	MJ
Weyerhaeuser	70		
		1	HJ
		2	LTP
		2	MJ
		6	TH
		1	TH*
		3	TTH
Whirlpool	147		
		1	HJ
		2	HTP
		1	MJ
Williams Companies	172		
		1	LJ*
		4	MJ
		2	SE*
Wm Wrigley Jr	414		
		1	MJ
Worthington Industries	475		
		2	MJ
Xerox	38		
		3	HJ
		1	HTP
		3	MJ

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SE—Single Engine; LPT—Light Piston Twin; PPT—Pressurized Piston Twin; HPT—Heavy Piston Twin; PPM—Pressurized Piston 4-Engine; LTP—Light Turboprop; HTP—Heavy Turboprop; LJ—Light Jet; MJ—Medium Jet; HJ—Heavy Jet; PH—Piston Helicopter; TH—Turbine Helicopter; TTH—Twin Turbine Helicopter.